

# THE BRICKBUILDER

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## THE BRICKBUILDER.

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### ADVERTISING.

Advertisers are classified and arranged in the following order:—

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### REGISTRATION FOR NEW YORK ARCHITECTS.

THE State of Illinois has for nearly three years had in operation a law obliging all architects who desire to practise to apply for a license, which is only granted upon satisfactory evidence of the applicant's ability, this ability being tested by means of an examination. The Architectural League of New York has, with most commendable zeal, taken the initiative in preparing a bill to be presented to the legislature of New York, this bill providing for a New York State Board of Architects, whose duty shall be to supervise the granting of licenses to practising architects, such licenses to be granted upon the results of an examination. A convention of the architects of the State of New York is being held at the rooms of the Architectural League as we go to press, the object of the convention being to consider the proposed bill, to awaken a more general interest, and to stimulate a more complete understanding of the subject and of the precise nature of the ends to be accomplished. A movement of this sort is to be commended in every respect. The registration law has worked admirably in Illinois, and has encountered comparatively little opposition. We can conceive of no good reason why it should be opposed by any one except from motives quite distinct from such as we would honor in our professional brethren. Indeed, we doubt if there would be any except the opposition from a political

source; for the bill as drawn and about to be presented before the convention is sufficiently elastic to adapt itself to all proper existing conditions, and if passed, could not fail to be a benefit in every way, both to the profession at large, and, what is perhaps of more real importance, to the community as a whole, which very often has to suffer through the ignorance of dishonest or incompetent practitioners. We sincerely trust that the convention will succeed in arousing sufficient enthusiasm and interest to carry this bill beyond the reach of political opposition, and to make it, or something covering the same ground, the law of the State of New York.

### LEGISLATIVE COMMITTEES.

THERE was presented to the Boston Society of Architects at its last meeting a very interesting report, made by a committee from the society which has had the especial care during the past year of the interests of the profession as affected in one way or the other by the action of the legislature. This committee has made it a point to be present at all hearings on bills relating to alterations in the building law, or legislation in any way affecting real estate or building; and its members have been authorized to represent the Society in such action before committees as would seem to be for the best interest of the profession. Judging by the report, this committee has been able to exert a decided influence in the legislative halls. If there had been no other tangible results, its efforts would have been well worth while as showing our legislators that the architectural profession is entitled to consideration in matters which directly affect it or its work. We wish that the various architectural bodies throughout the country could in some such manner as this come more directly in touch with the law-making bodies. The interests involved by any meddling with building laws are so vast that the more the educated members of the profession can be brought to assist in the formative processes, the better are sure to be the results. It is the constant reproach of nearly all of our municipal building regulations that they are conceived in ignorance, and enforced without proper consideration for results. Boston has been, perhaps, more fortunate than some other cities in that its existing law was drawn up, in a large part, by a committee representing the best elements of the architectural, the real estate, and the financial professions; but the experience of the last session has shown that nothing but constant watchfulness on the part of those intimately interested can preserve the best of laws from being viciously tampered with, and the fact that architects not only are interested, but are willing to give the time and

study to legislative work of this sort is an indication that architecture is a public profession to be considered in estimating the forces which make for good or evil in metropolitan life. Not many years since, the better architects were content to leave all such work to the professional politicians, and trust to luck that the laws were not too severely strained. Building since then has become so complicated, and also so vastly increased in possibilities, that the profession has almost been forced in self-defense to take a part in these affairs, such as has been, on the whole, so courageously and efficiently taken by the real estate and Master Builders' associations.

#### ROCK ISLAND LIBRARY COMPETITION.

WE have received from a subscriber the terms of a competition for plans for the Rock Island Public Library Building. It is fair to assume that the Board of Directors and the librarian, who are responsible for the somewhat peculiar conditions set forth, have been actuated by a desire to obtain the best possible results. If so, the chances are that they will be doomed to complete disappointment. There surely has been enough said in the professional journals all over the country to enable an ordinary and self-respecting librarian to know better than to expect any good results to follow when terms are as herein stated. The story is an old one to us, and every year there springs up a crop of such competitions. We trust the time will come when all self-respecting architects will rigidly eschew competitions of every sort for anything less than a large and important public building; but to expect, as is evident in this case, that competent architects will waste their time over quarter-scale drawings for a building for which the appropriation is manifestly too small, and will guarantee their plans by a check for a thousand dollars to be forfeited in case the building exceeds the limits of cost set forth, and all this when there is no assurance that the selection will be a fair one, and with the positive statement that only 3 per cent. will be paid for the architect's work, means simply that the so-called competition will very likely result in the choice of a man who will be either dishonest or ignorant. We should advise the librarian to study the ethics of business honesty a little more carefully and become more thoroughly acquainted with the means by which dishonest builders or architects are able to cheat their employers, before committing the work to the care of an architect such as a competition like this will call out.

THE T Square Club Catalogue might very fairly be classed among the hardy annuals. Surely the vitality and unflagging enthusiasm of the club seems limitless, and the catalogue this year keeps up the procession of constant progress in a most satisfactory manner. As in past years, it is preceded by a certain amount of literary endeavor,—recapitulating the work of the club and enumerating the progress of the past as well as setting forth the work of the future,—Mr. William Charles Hays being the secretary and editor of this portion. Attention is called to the increase of 12 per cent. during the past year in the number of architectural clubs. This

is a most gratifying fact, the full significance of which as a factor in our national development is, we imagine, not always rightly appreciated. These architectural associations, which only a few years ago were entirely unknown, are now acting most powerfully to stimulate the younger element, and, at the same time, to educate the community and to raise the standard of popular taste.

The catalogue shows that the present exhibition must be extremely interesting. A feature new to American exhibitions is the introduction of quite a considerable amount of representative work from Germany. Every contributing architect from that part of the world is a professor of something, which, perhaps, seems strange to us, but apparently is the rule there. The work sent from Prague is particularly interesting, and the drawings from Munich and elsewhere, while showing the very strong influence of the school of Otto Rieth, are full of individuality, and show promises which are not always, unfortunately, manifested in current German work.

#### "THE BRICKBUILDER" COMPETITION. VII.

##### AN ENTRANCE TO A CITY PARK.

##### PROGRAM.

THE municipal authorities of a large city, in the residential portion of which is a park, have condemned adjacent property for the purpose of enlarging the park.

The present park is bordered by wide streets, devoted to traffic and car lines, none of which can be closed.

The addition to the park will be rectangular, of the same width as the present park, and separated from it by one of the streets which runs from east to west.

The purpose of this competition is to provide an entrance to each of the portions of the enlarged park, at the west end of the intersecting street, and to so treat the street that its commercial character will disappear as much as possible.

The park ground is undulating, and the general character of the roads and planting is rural.

The design for the entrance is to be such as is adapted to working out in burnt-clay products.

**DRAWINGS REQUIRED:** A perspective sketch design for the entrance, and a sketch plan showing treatment of the street made in black ink, with no wash work, upon a sheet measuring 18 ins. wide by 12 ins. high. The drawing is to be signed by a *nom de plume*, or device, and accompanying the same is to be a sealed envelope with the *nom de plume* on the exterior, and containing the true name and address of the contestant.

Drawings are to be delivered, flat, at the office of THE BRICKBUILDER, 85 Water Street, Boston, on or before April 1, 1901. For the four designs placed first, THE BRICKBUILDER offers prizes of fifty, twenty-five, fifteen, and ten dollars, respectively. All premiated drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish any and all drawings submitted.

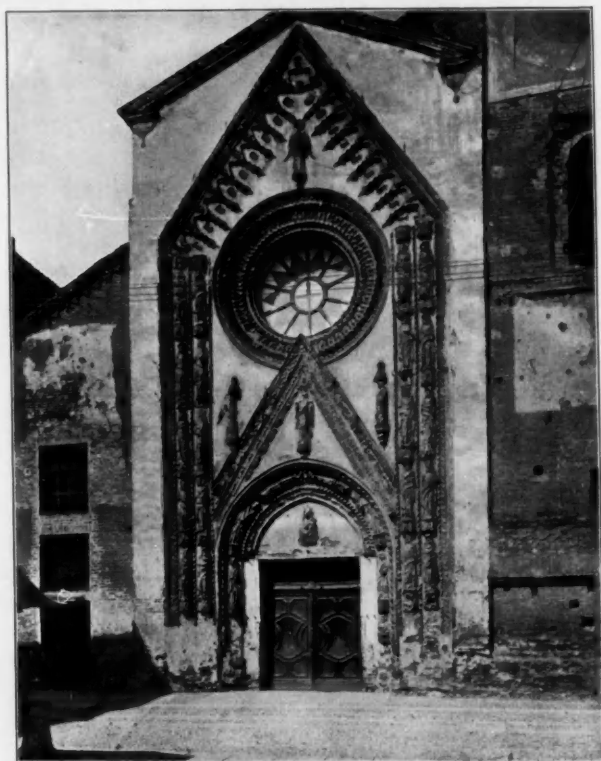
The competition will be judged by Mr. Henry Bacon of the firm of Brite & Bacon, New York City.



## ✓ Terra-Cotta Work in the Smaller Towns of Piedmont.

BY ALFREDO MELANI.

ITALY, so rich in marbles, where the quarries of Carrara, the Luni of the Romans, have for centuries provided architects and sculptors with quantities of



PORTAL OF CATHEDRAL OF CHIVASSO. 15TH CENTURY.

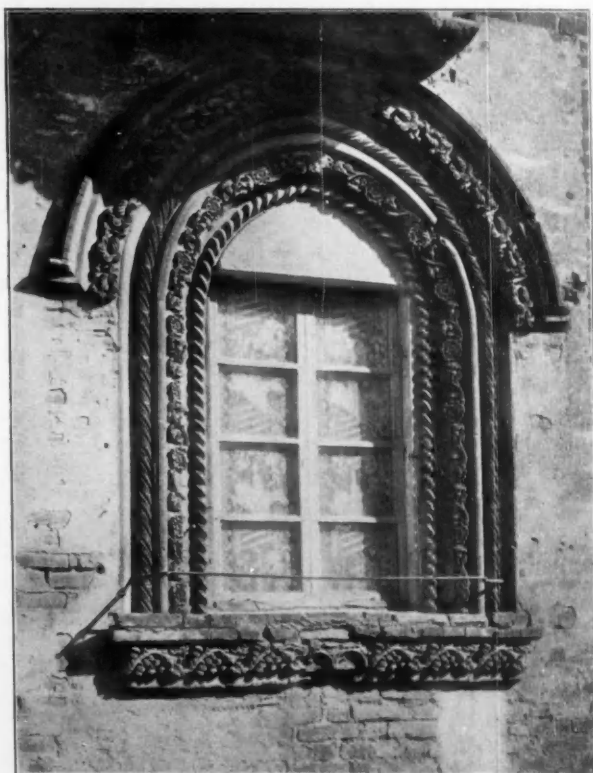
marbles of every kind, is not deficient in buildings constructed of brick; on the contrary, she possesses them in every province, where they stand beside the structures of stone and marble themselves. There exist, however, differences between one region and another, and it is well known that the most remarkable examples of terra-cotta in Italy are found in Lombardy and in the Emilia. These are precisely the two regions of which the terra-cotta has been made the object of special study, and THE BRICKBUILDER itself has at several different times illustrated specimens of these Italian productions which contributed so largely to the artistic glories of the Renaissance. The work here is mostly of the fifteenth and sixteenth centuries; and when in Italy the terra-cotta of the Renaissance is spoken of, the memory reverts at once to Lombardy and the Emilia.

But to say that all the terra-cotta work of Italy is concentrated in Lombardy and the Emilia is an exaggeration. As a matter of fact, the eye of the searcher, even in these provinces, is generally arrested at Milan, at the Certosa di Pavia, at Bologna, and at Ferrara, without seeing the treasures which exist in less important towns.

One region has certainly been forgotten: a district which lies just beside Lombardy, — Piedmont, — and I may add that from the point of view of art Piedmont has

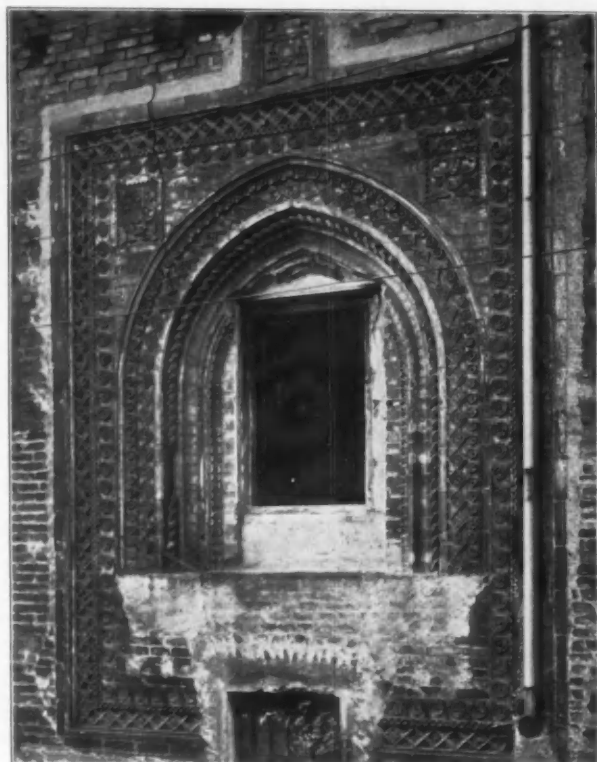
been the least studied of all the Italian provinces. "Piedmont Discovered" might be the title of an artistic work that would be successful and astonish the public. It is not generally known that some Italian students have turned a curious eye toward this region of Piedmont, and have begun to collect *le fronde sparte*, as the Divine Poet says; that is, the scattered fragments of the artistic treasures; but the organic work, the entire collection which would give the general and complete idea of artistic Piedmont, remains only a wish, the realization of which is still a long way off. Therefore, in writing in this excellent review, I shall wish to draw my material from the unpublished subjects, and look for the objects of my study in the unknown works of the smaller towns, outside the natural and easy paths of hurried travelers, and I will now ask my readers to give with me a glance at the terra-cotta work of one section of this great and picturesque surface of Piedmont, which extends from Lombardy and Liguria as far as the frontiers of France.

The foreign reader will desire me to explain to him at first the reason for the indifference and neglect to which Piedmont has been left, and I will endeavor to satisfy his wish. The historians have always considered the Piedmontese as a people instinctively devoted to the exercise of arms rather than the love of the arts, — an opinion



WINDOW IN TERRA-COTTA, MONTE DI PIETA, CARIGNANO.

which has an indisputable basis of truth; but while it is true that one cannot compare the Piedmontese with the Tuscan, or the native of Turin with the Florentine, nevertheless, Piedmont has never closed its territories to artists; and especially during the Middle Ages and during the last two centuries (seventeenth and eighteenth), it has exerted a remarkable influence on the development of the arts, having encouraged a number of artists and



WINDOW IN TERRA-COTTA, PALAZZO DELLA PORTA,  
NOVARA. 15TH CENTURY.

given them an opportunity of producing and executing their works in the midst of its cities, villages, and valleys.

But one of the most important and least clearly perceived reasons that account for the indifference and neglect of which we speak is the habit of judging all the work of a section from a small portion, especially if that small portion forces itself upon the attention by its conspicuous location or other advantage.

Thus, if one judges Tuscany by Florence, or Venetia by Venice, one should also judge in its art Piedmont by Turin, which is its capital, perhaps, because during the last few centuries it has been found at the head of all the progress that has been made in Piedmont. But it has been forgotten that while the arts flourished in Tuscany and Venetia, the unification of Piedmont under the dynasty of Savoy had scarcely begun. At that period art was protected by the Marquis of Saluzzo and Montferrato and the bishops of Asti and of Alba so diligently that, in their localities, much more important buildings were erected, and paintings and sculptures executed, than were seen in Turin and its environs.

It should be added that feudal customs continued in practice much longer in Piedmont than elsewhere in Italy, so that even at the end of the fifteenth century they were still in vigor. This circumstance tended to isolate Turin, and while the artists all visited Florence and Venice, they never came to the capital of Piedmont, but rather turned their attention to the smaller cities and the rural valleys of the Province. It is, moreover, true that in the expositions of ancient Piedmontese art that have been held in recent years, Turin has exhibited almost nothing, its suburbs very little, while the other

cities of Piedmont have exhibited a great deal. In the same way, when in 1884 the project was agitated of reconstructing a feudal castle in connection with a grand artistic and industrial exposition held in Turin, the architects underwent the tortures of Tantalus for the choice of motifs destined for this typical reconstruction, and they were obliged to seek inspiration in localities comparatively distant from the capital.

There is still another reason that explains this indifference toward artistic Piedmont: it is that the region has been so overrun by the artists of the baroque, who in reducing the old buildings to their own taste have destroyed several monuments of the Renaissance, and have imposed their mannerisms in such a way that Turin is to-day one of the most baroque cities of Italy — the Dresden of the peninsula. As the art of the seventeenth and eighteenth centuries has not been in favor during our own times, it has followed that Piedmont has been most injured by this unjust scorn in the past, and in her case it has been forgotten that the baroque — which, after all, has the right of respect — constitutes only a portion of her art, and that she also possesses many monuments of the Renaissance, Gothic, and even Roman periods.

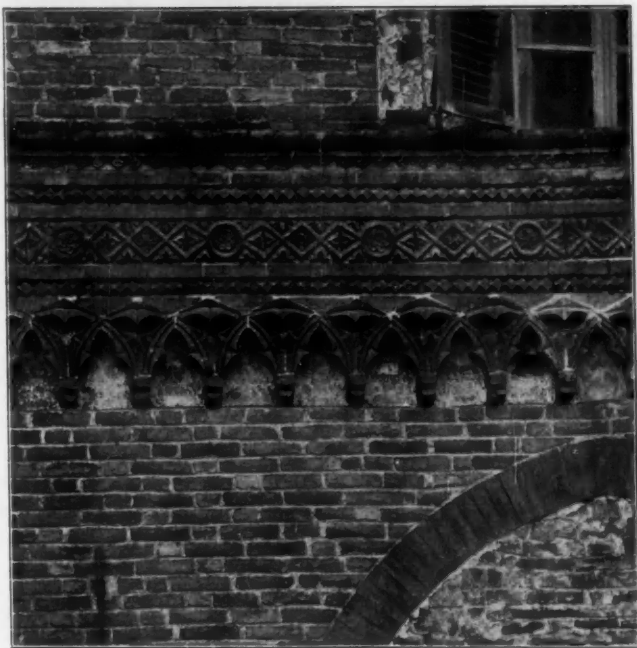
I do not insist further on this point, and I will confine myself henceforth to telling you that the lovers of art will find material to satisfy their taste in Piedmont as well as in all other Italian territories, and those who are especially interested in works in terra-cotta can even look in Turin the same as the smaller Piedmontese cities, but in the latter there will be found a wider series of monuments, particularly of the mediæval period. Turin, I have remarked, is the city *par excellence* of the baroque,



WINDOW IN TERRA-COTTA, PRIORATO DI S. ORSO, AOSTA.  
15TH CENTURY.



and its buildings are entirely built of brick, which is used for the walls and all the details of the doors, windows,



FRIEZE IN TERRA-COTTA, PALAZZO GIA CATENA, ASTI.  
15TH CENTURY.

and cornices, following the lines and undulations of this spirited and original style.

At present I will ask the reader to follow me and keep an eye on the illustrations. Considering that we are discussing works of the fifteenth century, the reader will be at first a little disconcerted and surprised. His surprise is legitimate. The Italian art of the fifteenth century is the art of the Renaissance, and here we find ourselves considering a Gothic monument. This requires an explanation, which is easy, nevertheless, to furnish. Piedmont, a frontier region, was dominated by a family which lived for a large part of the year in France, beyond the Alps, and naturally could not receive at once the results of the new doctrines, which, thanks to Brunelleschi, turned the architecture and decoration of Italy topsy-turvy during the fifteenth century; it remained, on the contrary, insensible to the taste which renewed the æsthetic spirit of the Italians, and during the fifteenth century was more French than Italian. Thus the general character of Piedmontese art at the time of which we speak is Gothic; and although some buildings in the style of the Renaissance exist in the Piedmont of the fifteenth century, it is nevertheless true that the Piedmontese taste of this century differs from that of other parts of the peninsula, as is shown by my illustrations to which I must now return.

The most important and most curious illustration is the façade of the cathedral of Chivasso. Where is the traveler, who, arriving in Italy by Modane or Fréjus, would stop at Chivasso? Nevertheless, this little city, which is situated on the railway between Turin and Milan, even if it had only this façade, would justify the intelligent traveler in stopping. I do not exaggerate in assuring you that the façade of Chivasso is one of the most singular

monuments of Italy. Every one will see for himself the French influence in this rich, sculptural decoration, whose figures, moldings, and ornaments glitter around the pointed doorway and on the jambs which rise at its side. Abundance of sculptural and figure decoration does not exist in the Italian tradition; with us the contribution of the mediæval master figurist is always reserved; any suggestion of elaboration may be traced to the further side of the Alps rather than to this side; and in Italy, even in the monuments where sculpture and statues occupy a conspicuous place, as in the cathedrals of Orvieto and of Milan, its distribution is different. Italy, in a word, does not possess such monumental portals as those of Notre Dame de Paris, Amiens, and Rheims, and the alignment of statues in the embrasures of Chivasso is inspired by the richness of the sculpture of France. The façade of Chivasso is also interesting in that it seems to connect the French Gothic influences with the Lombard (Roman) influence, as is shown by the large and fine and elaborately molded rose which opens above the portal. All this one can see in the reproduction, but the reproduction fails to show the reader the beauty of the terra-cottas, though every one will notice at once how well they have resisted the ravages of centuries. The attention of artists will generally be attracted by the independent way in which the architect has gotten out of the affair without recourse to any horizontal lines. At the point where the side shafts (*jambages*) are grafted on the lines of the frontis-



COURT OF CASTLE AT VINOVO.

piece, he has abandoned the statues, and commenced and followed a system of little arches, too small in scale, it may be said, beside the decoration below. Whatever it may be worth, we may accept this solution as one of great independence. A very pretty bit of work is the

angel, which, standing in an inspired attitude, holding in its hands the emblem of Christ, seems the personification of sweetness. I would have liked to add to my illustration a detail of this never-to-be-forgotten statue, but I was not able to find a photograph.

Fulness of modeling is not perhaps the principal merit of the artist of Chivasso, but it is indeed the principal merit of the author of the ornaments of the "Monte di Pietà" at Carignano. This city, near Turin, fell several times under the domination of France; but its art, of which a remarkable example is illustrated by the window reproduced herewith, is not French, or at least, if you wish, is French only in the matter of the freshness with which the ornament copied from nature is rendered by the modeler, who here has shown himself indeed a master. The frieze underneath the window, composed of branches of oak, rich in foliage and acorns, is such a piece of work that one of the master ornamentists of the most celebrated cathedrals of northern France, Paris, Amiens, Rheims, Troyes, Bourges, or Rouen, might well admit having executed it. Nor will my reader fail to notice how fully architectonic is the structure of the window of Carignano, which frames in the decoration marvelously well, marrying itself so easily to the movement of the ornamentation. We see here a work of the

fifteenth century, which, in Florence, especially, could not be found at that era, and which explains the difference in development in Italian regions, a not less interesting thing to call to the attention of foreign students. It should also be known that differences even between one city and another exist in certain regions, and that the window of Carignano, which could not have been found in Florence during the fifteenth century, could, however, have been found at Siena, the city which was the only one that through the passage of centuries resisted the influence of the splendors of Florence, I do not say victoriously, but with honor. Siena is the terra-cotta city of Tuscany, the "red city," as Bourget called it in his "Sensations d'Italie," because of the innumerable buildings of brick built there.

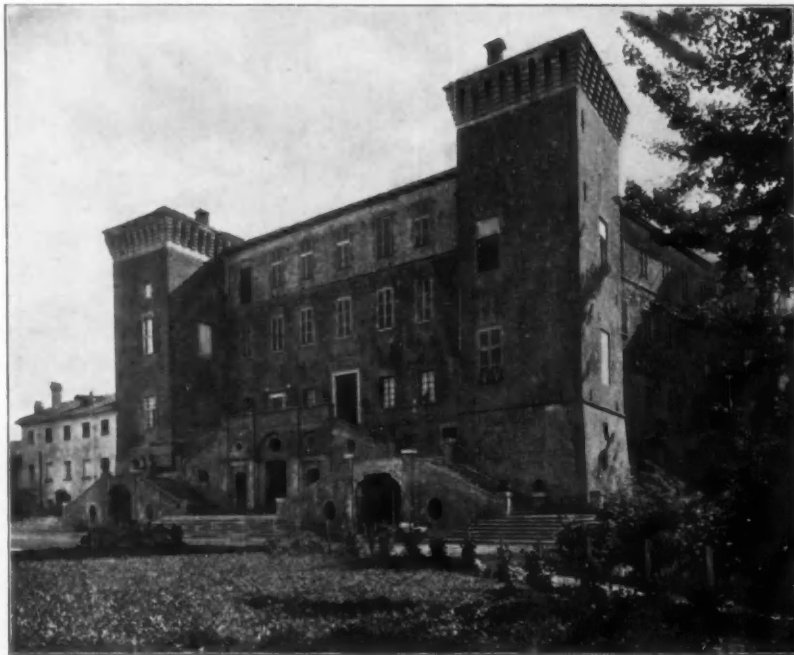
Returning to the window of Carignano, I may add that the pieces of terra-cotta of which it is composed are the finest that Piedmont possesses of this kind.

Of an entirely different kind are the ornaments which compose the Gothic window of the Palazzo della Porta at

Novara, a city nearer to Milan than Turin. Here we are concerned with a strictly geometric decoration, and, therefore, the window lacks the suppleness of the window of Carignano. These are two exquisite examples, but in a different and opposite taste; I might almost say that the example of Carignano is artistic, while that of Novara is industrial, and I made this choice purposely in order to show two compositions, whose only point in common is that both are made of terra-cotta. In short, the severity of the ornament in the window of Novara is not corrected by the architecture; and this severity is derived from the repetition of the same geometrical motif. The alternating of the motif scarcely exists in the window we are studying, where the over-repeated rosette motif and the other linear motif degenerate into a monotony. The example, however, may serve for

something, and the manufacturer who aims to obtain an artistic effect with the easiest and most economical means will find a model to imitate in the window of Novara. This much may be said: it is very much to be regretted that the quality of this piece of decorative architecture should not be different from what we now see; let us hope, however, that the fragment may be at least preserved just as it is to-day.

A more important example now awaits us. I found it in that valley of Aosta, which with



CASTLE OF VINOVO.

its castle of the fifteenth century is a veritable mine of artistic terra-cotta, so that I propose to submit to my readers other specimens as well as that which they will readily admire in the present reproduction. The window of the "Priorato" of Saint Orso belongs to a collection of buildings which should be visited by every intelligent traveler who goes to Aosta. We must at present confine ourselves to the "Priorato," a magnificent structure, which took this name from the fact that it was inhabited by the "priors" of the Chapter of Saint Orso from the end of the fifteenth century. This building was built at the expense of George de Challant, whose coins are seen painted on the eastern façade. There are three façades, corresponding to three ranges of buildings, which connect at a right angle; and in this *ensemble* is a profusion of admirable ornaments in terra-cotta, among which are developed the most rich and fantastic designs that one can imagine. Wishing to give an idea of these ornaments, I chose a window with cross mullions, a type which though not Italian, but French, yet occurs in Italy at Turin, Rome, Perugia,



Pistoja, etc., as well as at Aosta. But these examples have not the richness and importance of that of Aosta. This is in terra-cotta, while the others are in stone and without ornaments. The frieze which forms the jambs and architraves of the window of the "Priorato" has some points of resemblance with the window in terra-cotta of the Ospedale Maggiore of Milan; these "putti" which interlace with the foliage, whose appearance does not have that symmetrical stamp which is at the bottom of Renaissance ornament, are really pretty; though the decoration of these little cherubims in the last molding of the four empty spaces into which the window is divided is none the less done with discernment. These heads are like an embroidery around the exterior molding, and this embroidery is indeed in its right place with the abundance of ornament around all the window. Take it away and you will see that its presence is more than essential and indispensable. At the same time, the little busts which grow out of rosettes, placed at the intersection of the cross and of the lines which frame the window above the frieze, are indispensable. Not less here than in the moldings with cherubims has the master ornamentist shown a perfect knowledge of the effect of architectural decoration in connection with the conditions imposed by the use of terra-cotta, which, as in the case with all stamped ornaments, requires a certain discretion on the part of the artist. I do not speak of the great cornice which runs above the window, and which appears a little heavy beside these decorations; the windows of the "Priorato" of Aosta are supposed to have the place of honor in the façades where they are found; and all that rests above or below them, at one side or the other, has only a secondary importance. In short, the windows of which we speak are jewels, and like jewels ought to be imagined alone in a velvet box!

To those of my readers who wish to see a superb cornice in terra-cotta chosen from Piedmont, I would suggest observing that of the former Palazzo Catena at Asti; and I could cite other specimens if it were desired.

By the side of all my Gothic illustrations, there is the court of the castle of Vinovo in the style of the Renaissance. We are still in Piedmont, but my reader knows that for the richest and most interesting Italian terra-cotta of the fifteenth and sixteenth centuries he must not look in Piedmont, but in Lombardy and the Emilia. As I have already said, this is not making the statement that Piedmont is absolutely deprived of it, and the court of Vinovo shows us not only the existence of Piedmontese terra-cotta, but the existence even of a monument of the first order. I regret that the candelabra which form the trimmings of the pilasters and frieze of the arches of the portico at Vinovo are reproduced at too small a scale to be understood; a detail would show that the master modeler here far surpassed the work of the merely correct and reserved school, and that these medallions below the cornice are truly incomparable! These medallions are worthy of the most refined artists of the Renaissance, and the Lombard ornamentists, who enriched the several monuments of Milan, might well wish to have to their credit these medallions of Vinovo, — true examples of elegance and clever reality!

At the earliest opportunity, I hope to continue, as far as possible, my "gleaning" of unpublished material.

## Byzantine Brickbuilding. II.

BY H. B. PENNELL.

TO fully appreciate the magnificence of Santa Sophia we must reconstruct it in our minds as it was when Justinian, on the day of its dedication, stood before the altar and exclaimed: "Thanks be to God who has judged me worthy to accomplish so great a task! Solomon, I have surpassed thee!" That was in 537, before the ravages of time and man had despoiled it; before the conquering Turks, unawed by its sanctity and bent only on plunder, dug from the walls the glittering bits of mosaic, and from the sacred vessels the precious stones; before the Mohammedans whitewashed its gorgeous walls, hung high on the piers their Koran-inscribed disks, and covered the pavement with their prayer-carpet. The Santa Sophia of to-day is the mosque "planted in the bosom and attached to the walls" of the ancient basilica. Fortunately the interior arrangement is unchanged; and aided by the descriptions of authorities like d'Amicis and Bayet our imaginations can present to us at least an approximate idea of Justinian's lavishly adorned masterpiece.

Every one knows Santa Sophia as modern photographs represent it: its tremendous nave surmounted by the great central dome and two half-domes; the small round chapels that terminate the east and west axis; the vast porticoes, themselves as large as an ordinary church, that form the north and south arms of the cross; the galleries that meet the eye wherever it turns. Innumerable columns of green breccia, of porphyry, and of marble are the spoils of all the temples of the world; placed together by chance, their capitals present a strange mixture of styles and a fantastic conglomeration of motifs in the carved "animals, leaves, crosses, and chimeras, all woven together." "Among the columns, the balustrades, the pedestals, and the slabs which remain of the ancient lining of the walls may be seen marbles from all the mines of the Archipelago, from Asia Minor, from Africa, and from Gaul. The marble of the Bosphorus, white spotted with black, contrasts with the black Celtic marble veined with white; the green marble of Laconia is reflected in the azure marble of Lybia; the speckled porphyry of Egypt, the stained granite of Thessaly, the red and white striped stone of Jassy, mingle their colors with the purple of the Phrygian marble, the rose of that of Synada, the gold of the marble of Mauritania, and the snow of the marble of Paros" (d'Amicis, "Constantinople," p. 179). To complete the basilica as Justinian knew it, we must reclothe the dingy walls with marbles which "send back reflections of gold, of ivory, of steel, of coral, of mother-of-pearl," and replace the mosaics of crystal which shine like silver and diamonds in the light from myriad windows. The capitals, the cornices, the doors, the borders of the arches, are all of gilded bronze. The vaults of portico and gallery are painted with colossal figures in a golden field. On the great domes, mosaics represent saints and angels, the Virgin, and the Cross; and on the pendentives appear the gigantic wings of cherubim, whose faces are hidden by gilded rosettes. "In front of the pilasters, in the chapels, beside the doors, among the columns, stand statues of marble and of bronze"; there are, besides, "enormous candelabra

of massive gold, gigantic evangelists bending above reading-desks resplendent as the chairs of kings, high ivory crosses, vases shining with pearls." In place of the Mussulman pulpit and the tribune of the Sultan stood the ambon, with its dome and cross of gold, and marble, and precious stones; the balustrade of the choir of gilded bronze; the priests' seats and the emperor's throne sculptured, inlaid, and set with pearls; and in the apse, "the altar, of which the table, supported on four golden columns, is made of gold, silver, pewter, and pearls all melted together; and the pyx formed of four columns of massive silver surmounted by a globe and cross of gold weighing two-hundred and sixty pounds." (*Ibid.*, p. 182-183).

One cannot wonder that Justinian was obliged to increase his taxes and resort to arbitrary measures to meet the expense of so splendid a monument. The result



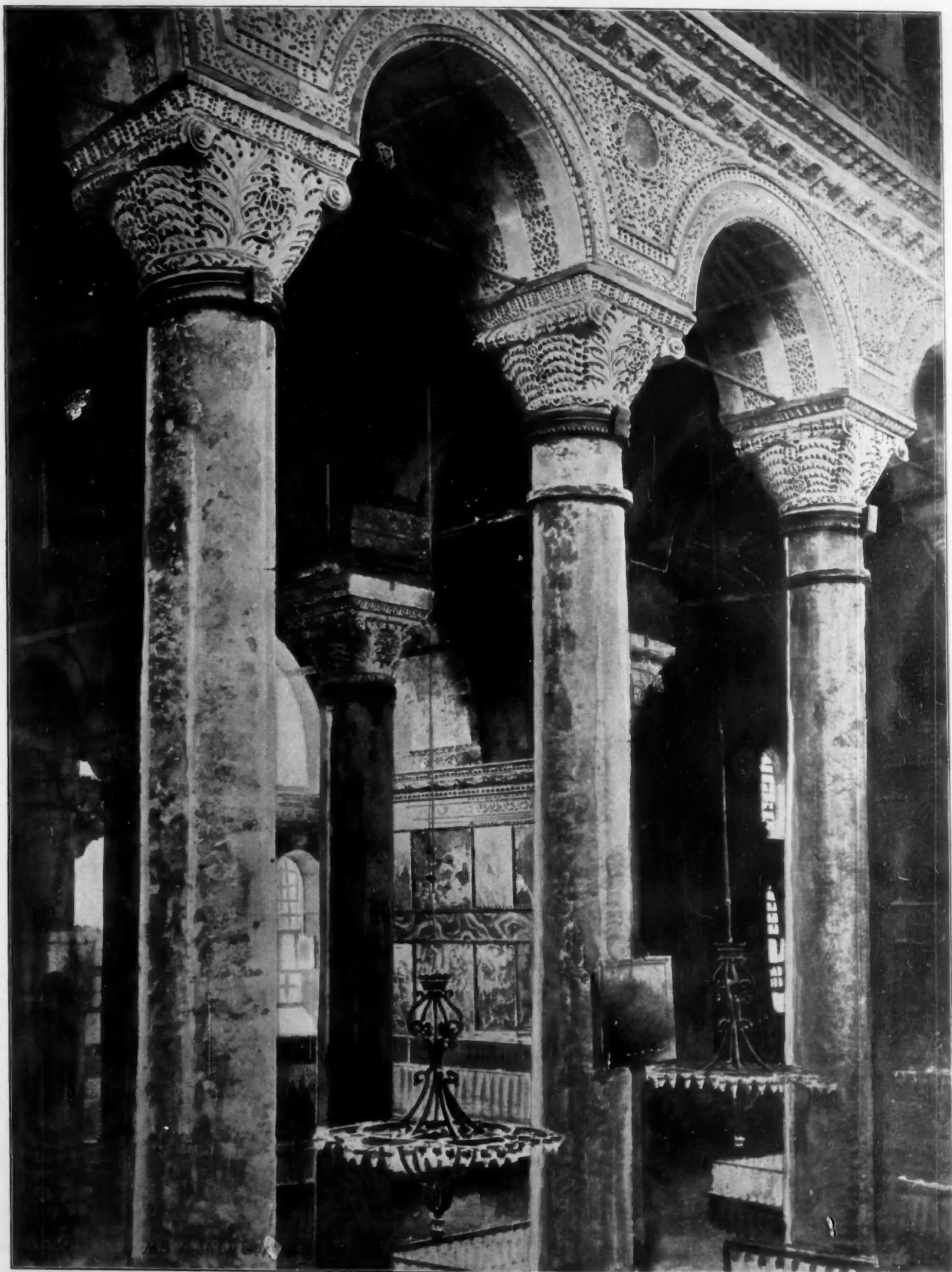
VIEW FROM GALLERY, ST. SOPHIA. ]

satisfied his ambition to build a church whose magnificence should surpass even the reports of all that had gone before. Bayet accuses Justinian of valuing the cost more than the beauty of his edifice. "The ancient Greeks used for the walls of the Propylæa or the Parthenon the most perfect marbles because they admired their purity and luster; Justinian wished gold and silver everywhere because they are a sign of wealth" (Ch. Bayet, "L'Art Byzantin," p. 42). However, we can forgive any mercenary tendencies in view of what his architects, Anthemius and Isidorus, accomplished for their art. For without doubt the dome of Santa Sophia, which has stood for so many centuries, has been a model for constructionists, and an incentive to the careful study of methods and results in dome-building. Its solidity was not accomplished without effort, but is the result of repeated experiments. As it stands to-day it is a vast dome 105 ft. in diameter, carried on pendentives between four arches; thence the weight is carried to the ground by four huge piers of a kind of Pepperino freestone. The pendentives are filled in with a whitish stalactical mate-

rial in its rough state, and showing impressions of plants; the mortar, in joints 1 to 2 ins. thick is reddish, apparently from the addition of pounded tile. The pressure of the east and west arches is resisted by the transept walls, and semi-domes form buttresses on the north and south. During the process of building, the structure twice showed signs of weakness on the east side; the dome was rebuilt, and the piers and buttresses were strengthened. The third dome, according to ancient writers, was of pumice, or light Rhodian bricks whose weight was one fifth that of the ordinary brick. But our modern authority, Salzenberg, has found no trace of anything but the customary well-burned brick in the present dome. Further support being necessary, the arches on the north and south were filled in with clearstory walls whose windows and arcades are now prominent features of the interior.

During the next twenty years numerous earthquakes shook city and temple, fissures were made in the dome, and in 558 a portion of it fell. Justinian entrusted its reconstruction to a nephew of Isidorus, who, like his famous colleague, Anthemius, was dead. According to some writers, the consulting architects decided that the main cause of the weakness was that the wooden frames of the arches had been removed too soon in order to facilitate the work on the mosaics. Isidorus' nephew, accordingly, took great precaution, and while he somewhat increased the height of the dome, he gave greater solidity to the arches. He also left the frames and scaffolds in place a long time, and before their removal had the lower part of the church flooded in order that the pieces of wood in falling should not shake the new constructions. That dome has stood nearly thirteen centuries and a half, with the addition by the Greeks in the fourteenth century of works on the exterior to strengthen the eastern angles. All through its history it is noticeable that the substructures, not the dome, were at fault. Mr. F. W. Marks, A. R. I. B. A. (*American Architect*, Sept. 12, 1891, p. 169, *et seq.*), gives the following facts of the construction: "Whether constructed of pumice stone or of light or heavy bricks, the recent dome seems to be of homogeneous construction without separate ribs, answering, in fact, to our ordinary idea of a dome as typified by the internal brick dome of our own St. Paul's (London). The general thickness varies from about 2 ft. to 2 ft. 6 ins. It has strong buttresses as abutments (8 ft. 6 ins. thick) above the springing, and the walls under are excessively thick as compared with the thickness of the vaulting. Some of the bricks in the vaultings are 14 ins. square by 2 ins. in thickness. In the lower part of the great cupola some are 27 ins. long, 9 ins. wide, and 2 ins. thick, and others are 27 ins. square on the side. The principal cupola appears at first sight to rest upon four arches, each 100 ft. wide, but in part only those on the east and west have that span, and on the north and south the real supporting arches are reduced in width to 72 ft., and only three fourths of the circumference of these last arches has radiating joints, the parts next the springing being laid horizontally. . . . The abutments (of the arches running transversely north and south) were at first only carried up to the spring of the great arches, and were concealed beneath the roof over the side galleries, but after the fall of the dome they were raised by





DETAIL OF INTERIOR OF ST. SOPHIA.

command of Justinian, so that they are now within 18 ft. of the base of the cupola, and form the vast projecting masses called pyramids." The base of the dome consists of a crown of forty windows, which seem already to suggest the Romanesque lantern tower. "The windows project externally, and now support metal plates curved to correspond with the window-heads, but they probably once carried brick arches and served as an effective tambour to the cupola. The piers (between the windows) are continued as ribs on the inside of the vault (which begins with a thickness of 29 ins. over the windows); they project at first 6 ins., gradually decrease, and die away into the great central disk of the cupola. At the crown the cupola is only 24 ins. thick, measured through the holes left for suspending lamps. . . . The cupola is covered with sheets of lead  $\frac{1}{4}$  in. thick, fastened to wood laths resting directly on the vault."

No wood is used in the construction of the church, and stone courses occur only in the foundation and at



INTERIOR OF ST. SOPHIA.

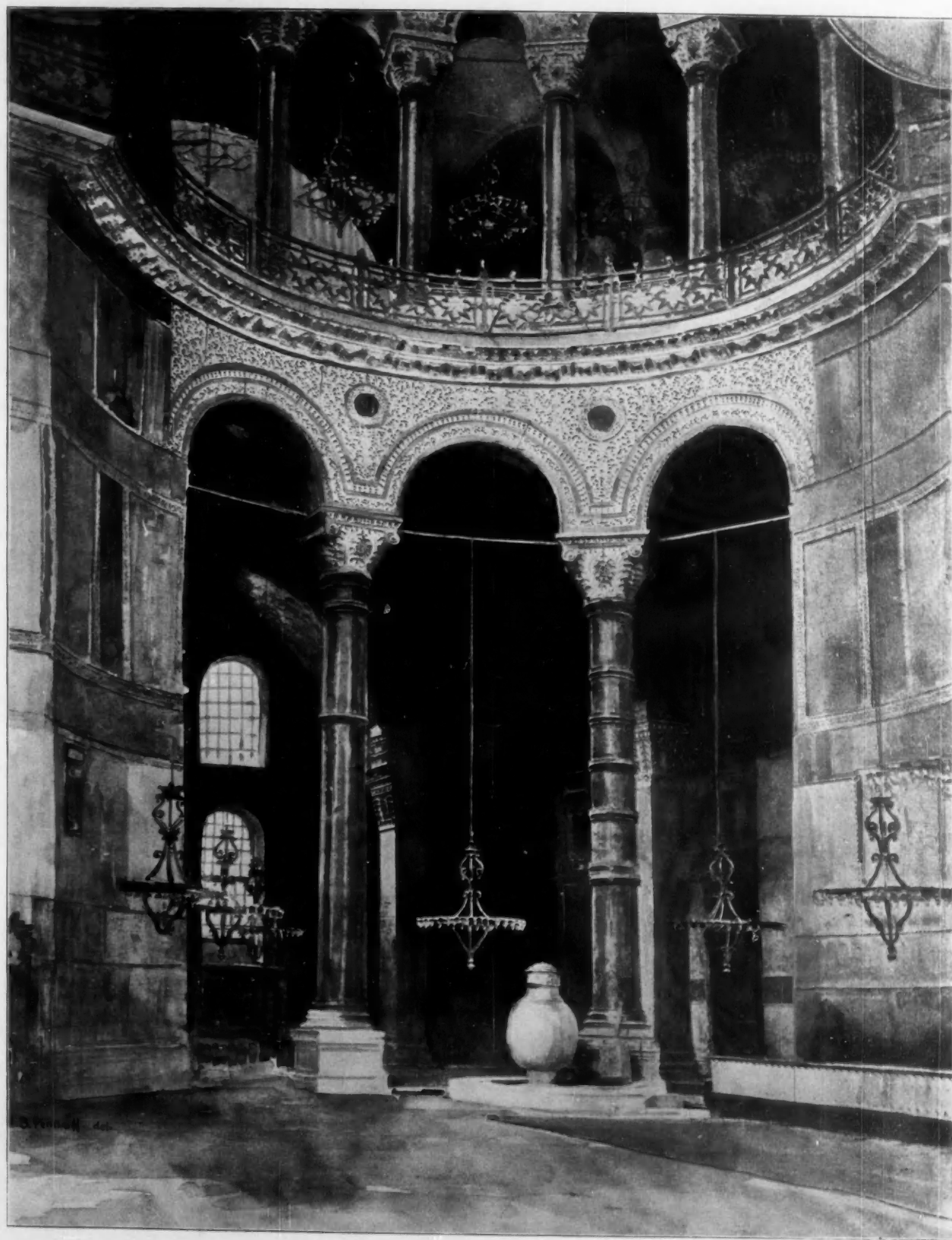
the base of the main dome. The bricks used for the walls are inscribed with David's words: "*Deus in medio eius non commovebitur. Adiuvabit eam Deus vultu suo.*" Customarily, Byzantine bricks were marked with a stamp to indicate their destination, those for churches bearing the cross and monogram. On Roman bricks we more frequently find the name of the maker. Some facts given in the introduction to "Byzantine Architecture" by Texier & Pullan are of interest in connection with the materials used in Santa Sophia. Bricks were made of tempered clay, pressed into molds shaped like the Roman *plinthos*, and show the prints of the feet of men and children. Cornices and moldings were formed of pieces made in molds. Bricks used for the shafts of

columns were circular and in two parts, if the column was not over 12 ins. in diameter; in segments, if the column was larger. Like the Roman, these bricks were  $1\frac{1}{2}$  ins. thick, and the mortar was  $\frac{1}{2}$  in. thick. Mortar was made according to the Roman formula:  $\frac{1}{3}$  rich chalk,  $\frac{1}{3}$  sand, and  $\frac{1}{3}$  brick-dust. The lime was carefully chosen, and the sand was taken from river-banks, not from the seashore, and was free from foreign particles. In hydraulic works the sand was omitted. They borrowed from the Arabs the kind of mortar referred to in the previous article as "Khorassan," which was brownish, and composed of hydraulic lime and fine sand, together with particles of tile. It was very similar in quality to Portland cement, and by using it the Byzantines could erect their domes at slight cost. The bricks were dampened before being laid on the mortar, as is apparent from the rough surface of the brick visible on the bed of cement. The joints were always carefully pointed to form a projecting fillet. In foundations and the cores of walls where large masses of concrete were used, the courses were laid by means of frames, or large wooden boxes without top or bottom, in which, in the case of walls, the bricks of the facing were first adjusted, then the cement was thrown in and pressed down by a rammer. When the cement was properly set, the pieces of wood were removed, leaving holes which are still to be seen in some ancient buildings.

Viewed from the exterior, Santa Sophia is more mosque than basilica. One can see only the dome, flattened and unimposing, rising above Mohammedan additions, and overtopped by the four graceful minarets. The spacious atrium, once enclosed by vaulted porticoes with marble columns and piers of brick, is now surrounded with the tombs of the Sultans. The lower part of the church is hidden by small modern houses and shops, which seem to desecrate the ground purchased at a high price by Justinian in order that his church might stand in the imperial quarter, close by his Hippodrome and palace.

Santa Sophia, to M. Bayet, is the most important church of Christian art: "Notre Dame de Paris reckons its equals right in the neighboring provinces; St. Peter's at Rome lacks originality, and is Christian only in its destination. Santa Sophia, on the contrary, has a double advantage in that it marks the advent of a new style, and attained at one leap such proportions as have never been equaled in the Orient" (*op. cit.*, p. 41). While in a way it resembles the earlier church of SS. Sergius and Bacchus, from which it might have been evolved by splitting the plan in the middle and inserting a huge dome between the half-domes, in its turn it served as a model for later churches. But it has no closer imitation than the Church of the Mother of God, built in Constantinople in the ninth century. No attempt was made to copy its proportions. Architects showed their originality rather in the plans, the grouping of domes, and more decorative exteriors. The churches of Daphne and of St. Nicodemus in Athens remind us of the Hagia Theokotos and SS. Sergius and Bacchus in plan and structure, and afford illustrations of the alternation of brick and stone in the wall courses. Hagia Theokotos also shows ornamental columns and arches; and the crown of windows in the dome, first introduced by Anthemius in Santa Sophia, is here evolved into a circular drum.





INTERIOR OF ST. SOPHIA.

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## The "Village Bank" Series. III.

BY EDGAR V. SEELER.

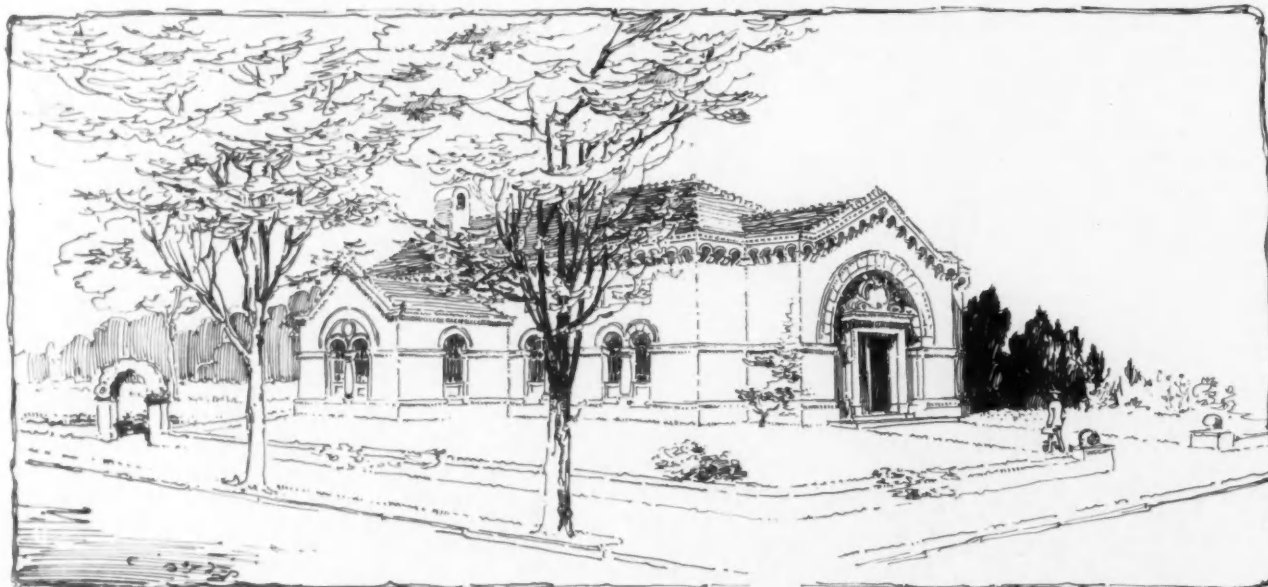
AMERICAN villages, and indeed American cities, have for the most part developed from a few scattered buildings,—the store, the inn, the public meeting-place,—set down irregularly along the main road or at a crossroads. The public square, the plaza, were unthought of, or the cost of maintenance precluded their adoption. In the more recent suburban enterprises, where the conditions might be supposed to render it possible, the open public space has by some short-sighted policy been considered too great a luxury to make the investment a profitable one. Exceptions may be found in one or two industrial towns, but the reason has been in a greater or less degree a charitable one.

The plaza must be a part of the conception of a town from the beginning, or it is difficult of realization. It is strange, too, considering the dignity, the attractiveness, and the architectural possibilities which the plaza adds to village life, that it should have been so universally neglected. Nearly every town of five thousand inhabitants

that which represents the dignity, the artistic and intellectual sentiment of the community, a composition, a correlated group, a harmony of style, color, and setting.

The bank of which this article is the immediate subject is intended to be one building of such a group. As a financial institution it can scarcely be supposed to have monumental approaches; generally speaking, banks do not put much of their capital into excess territory. And even though the general tenor of the architectural group is picturesqueness, the bank, by reason of its more serious nature, should partake less of that quality than many of the other buildings. There can be no use for towers, little need of high roofs, and ornamentation, if used, should be quiet and restricted to the constructional lines, except, perhaps, at one or two points of central interest and accent. It should correspond in color and general style to the other buildings, and in these two qualities should find its chief accord with the picturesqueness which might more reasonably be supposed to attach to them.

Color correspondence in buildings is to the mind of the average observer the most striking source of resemblance of which he is capable of taking cognizance. The



A VILLAGE BANK.

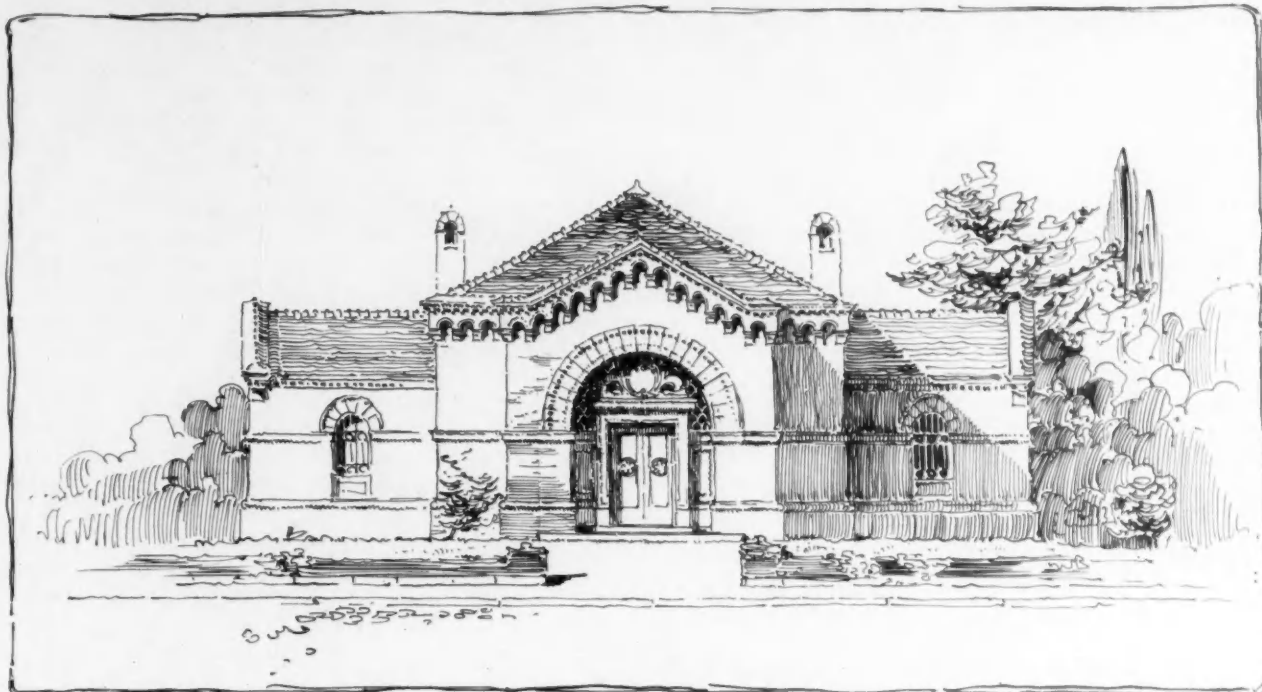
or more has a dozen buildings of public or semi-public nature, which naturally group themselves about a plaza.

This neglect may not be considered so strange either, upon second thought, if we remember that even the national Capitol has, in its development, wandered far from the fundamental principles laid down by its founders. It may be in this instance that the scheme was a vast one and difficult to carry out in the earlier and poorer days of the republic; but the erection of important buildings in out-of-the-way places, devoid of natural or artificial setting, continues, and the future looks to the perpetration of other crimes—for the importance of the case raises the offense to a crime—of the same sort.

And yet the lesser importance of the village does not relieve the architect, the engineer, the surveyor—in whosoever charge the laying out of the village rests—of the responsibility of making the center of the village,

buildings about Copley Square, Boston, before the Public Library was built, were infinitely quieter, more in key one with another than they have been since. One who has followed the architectural development of the square feels, perhaps, that the library is an intruder. He willingly, gladly, accepts the design, its proportions, its dignity, its details, its expressiveness of the purpose of the building; respects it and studies it as one of the finest buildings that America has produced. But there ever remains the wish that it might have harmonized in color with Trinity Church and the Art Museum, with the dull tones of the New Old South, with the row along the north side of the square, the buildings of the Institute of Technology, and with the various other structures in view from the square. It is unfortunate always to object without suggesting the remedy, and it is difficult to think of executing the library design in any material not similar



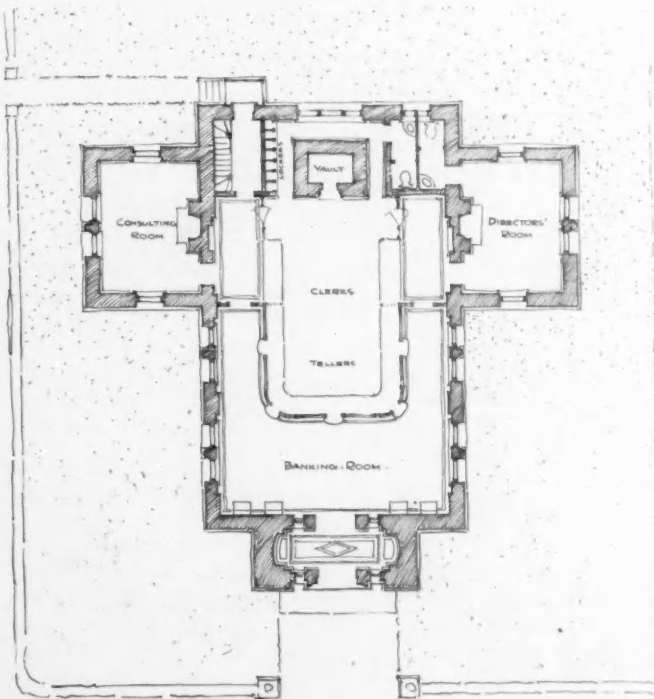


A VILLAGE BANK.

in color value to the granite of which it is laid up. It remains a fact, however, that color correspondence is the first note of harmony that the average eye asks and appreciates.

The village bank may justly be supposed to occupy a corner property, related to the public group, but certainly not on the principal axis, probably not on the secondary axis. It would balance, in a symmetric grouping, with a small office or store building, or some building of similar purpose. It is intended to be constructed of brownish brick with terracotta trimmings of the same color, and roof of dull red tiles.

It is scarcely to be assumed that all the buildings about the plaza would be designed by the same architect. There is the likelihood of their being different in style, or at least in character of detail. It is also likely that the court-house or town hall, as the center of the group, would require to be, by way of emphasis, of more strikingly colored materials than the remainder of the buildings. All of which argues in favor of the subordination of the minor structures. The natural setting of lawns and trees in addition to the character of the particular



A VILLAGE BANK.

building under consideration supports the choice of dull rich browns for the exterior finish.

In plan, the building has been kept as simple and direct as possible. The public has full access to the tellers and clerks, convenient but not free access to the officers. The officers and clerks have all the privacy they need. The rear entrance can be used by the clerks before and after banking hours, as well as by the janitor and watchman at all times.

The city bank is tending of later years towards a plate glass enclosure. It is practically open to the sweeping view of all passers, who, with the police, act as a safeguard as much as the watchmen in the bank's employ. This

system is scarcely applicable to the small town, so that the requirements of smaller windows, well grilled, and not too near the ground, are imperative. Light is another absolute essential, and can best be accomplished by the overhead system. While the design, therefore, shows a series of small windows, they are grouped interiorly within large arches, corresponding to the arch of the entrance, and the central panels of the flat caisson ceiling are glazed.

ARCHITECTURAL AND BUILDING PRACTICE  
IN GREAT BRITAIN.

A RETROSPECT OF 1900.

(BY OUR SPECIAL REPRESENTATIVE.)

THE nineteenth century has ended in England without having evolved a distinctive style of its own. At the commencement there was a strong classic movement: first the old traditional classic of Chambers and his school, and then the new Greek style, carried to such a high degree of excellence by Decimus Burton; later came the enthusiastic revival of Gothic architecture; and at the present time we seem to be at the height of what is termed "English Renaissance," a style which appears to have the best chance of success in competitions. But despite the fact that the more monumental work of recent times has been disappointing, in the region of domestic building,—the small country house,—considerable success has been achieved, for a style has been developed, based on the frank recognition of domestic needs, which will outlive the English Renaissance and its more pretentious buildings. Undoubtedly, the chief architectural event of the past year has been the competition in connection with the new street (100 ft. wide) to be formed between Holborn and the Strand at a cost of \$25,000,000. London has materially suffered in the past from the fact that the architectural features of new main thoroughfares have not been adequately controlled by the authority carrying out the improvement, with the result that we possess such places as Charing Cross Road and Shaftesbury Avenue, where the buildings are utterly lacking in civic dignity and character. In order to secure a fine architectural effect, the London County Council decided to invite eight architects to submit designs for the buildings facing the crescent portion of the new street and those on the Strand frontage, agreeing to pay each architect £250 (\$1,250). The competing architects were: Messrs. Reginald Blomfield, Edward W. Mountford, Leonard Stokes, Mervyn Macartney, Ernest George, Henry T. Hare, Ernest Runtz, and William Flockhart. With one exception, the designs were more or less Palladian in style, and though several of them were very meritorious, none exhibited that massing and grouping of parts so essential to the effective treatment of large blocks of buildings and so ably represented in the works of the great French architects. The official report on the designs by Mr. Norman Shaw has not yet been published, but coming as it does from the leading architect in this country to-day, it is awaited with more than usual interest.

A proposal in connection with this new street, which attracted a great deal of attention, was made by the eminent engineer, Sir Frederick Bramwell. He suggested that the buildings facing the straight portion of the thoroughfare, which will be about a third of a mile long, should be constructed after the manner of the "Rows" at Chester; that is, with shops and a covered footway at the first-floor level, bridges spanning the side streets and stretching at intervals over the main thoroughfare. This proposal, however, did not meet with approval in professional circles, as it was considered that the buildings would not present a satisfactory appearance;

besides, the London County Council could not erect all the buildings themselves, as this would cost \$200,000,000, and there was, therefore, the question as to whether individual lessees would bear the cost.

Another large competition decided during the past year was that for the new Sessions House to be erected on the site of Newgate Prison, which is soon to be pulled down. The successful competitor was Mr. Edward W. Mountford, whose estimate amounted to \$1,125,000, this sum including \$15,000 for sculpture, \$30,000 for heating and ventilating, and \$15,000 for electric lighting and fitting. The main building comprises about 2,390,000 cu. ft. and was priced at 1s. 6d. per cu. ft.

Though competitions are well responded to, there is a growing dissatisfaction with the principle on which they are based and with the manner in which they are conducted. In several instances, the first premiated design has not been carried out, which accentuates the evil. A church competition in the south of England attracted one hundred and fifty competitors; allowing six weeks for the completion of each design, this gives a total of nine hundred weeks (or about seventeen years) of vain labor, for of what use were the one hundred and forty-nine rejected designs?

The last architectural exhibit at the Royal Academy was, taken as a whole, a very good one, the most important drawings being those of Mr. Aston Webb's building for the Royal College of Science, at South Kensington; Mr. J. M. Brydon's design for the circular court (160 ft. in diameter), which will form the chief feature in the new government offices to be erected in Whitehall; Mr. John Belcher's Eastern Telegraph Company building now in course of erection in the city; Mr. Colcutt's building for Lloyd's Registry; and the design for new Medical Schools at Cambridge by Mr. Edward S. Prior.

For the past fifty years considerable attention has been drawn to the problem of housing the working classes, which, with the increased cost of materials and labor, has assumed an alarming aspect. Attempts have been made to cope with it throughout the kingdom, with more or less success (large tenements and hundreds of cottages have been erected at Manchester, Birmingham, Liverpool, Edinburgh, Dublin, and Bradford), but it is felt that no real solution will be possible until certain modifications are granted by Parliament in regard to the tenure of land and the borrowing of money by municipal authorities. The largest scheme yet undertaken in this country has been that of the Boundary Street Area in the east of London. In the eighties, this was one of the worst places in the metropolis, crowded with houses not fit for human habitation, and occupied by thieves, ruffians, and people of the very lowest class. The widest street was barely 28 ft. across, and in the building of the hovels no mortar was used, being replaced by a material called "billy-sweet," the chief characteristic of which was that it never properly dried. The whole of this plague spot has been swept away, and on the area of fifteen acres twenty-three blocks of tenements now stand, the last of them having been opened in March by H. R. H., the Prince of Wales. The buildings are for the most part of red bricks and are quite pleasing in appearance, despite the fact that



the most stringent conditions were imposed. The majority of them were designed by Mr. Thomas Blashill, the late superintending architect to the London County Council, the remainder being the work of Mr. Rowland Plumbe. In all, 5,380 persons have been accommodated at a cost of \$2,500,000. At the present time, the Council has fifty-four dwellings open, which provide accommodation for 10,686 persons at a cost of more than \$3,000,000; in addition, buildings are nearly ready which will provide for 5,666 persons at a cost of \$1,500,000; so that altogether there is provision for 30,000 persons at a cost of \$9,000,000. It will readily be understood that schemes of such magnitude entail a vast amount of labor and difficulty, and it has recently been considered imperative to form a special Housing Department controlled by a Housing manager, whose salary will be \$4,000 per annum.

The problem of providing accommodation for the working classes is made more complex by the fact that during the last fifteen years the cost of building has increased enormously, owing to the shorter hours of labor, the increase of wages, and the rise in the price of materials. Moreover, the same amount of work is not done in a given period. The bricklayer at one time laid between 800 and 1,000 bricks a day, but now not more than 400 are laid; and when it is remembered that in a workman's dwelling there are probably about 35,000 bricks, with stone-work for windows, it is obvious that there is a great increase in the cost; in fact, a building which could have been erected for \$1,200 fifteen years ago now costs \$1,600. The following figures show the difference in the net cost, for labor only, in the several trades named for a superior workman's dwelling, the total cost of which was in 1890, \$1,860, and in 1900, \$2,525:—

	1890	1900
Bricklayer . . . . .	\$120	\$210
Joiner . . . . .	240	325
Mason . . . . .	100	140
Plasterer . . . . .	70	125

On February 23 last, the eminent architect William Butterfield died. He was the last survivor of that little group of enthusiasts who brought about the Gothic revival, and all his work was characterized by great sincerity, frank loyalty, and a striking originality. Brick was the chief material used in his buildings, and he employed it as an artist does his pigments; that is, he treated the brick not only as a building material, but as an element of color, in a manner unequaled by any of his followers. This is most markedly seen in Keble College, Oxford,—perhaps his most characteristic work,—but Jesus College, Cambridge, All Saints' Church, London, and the numerous other beautiful buildings designed by Mr. Butterfield all exhibit the same artistic treatment, and are splendid examples of brick architecture. In the list of deaths during the past year must also be included the names of William Young and Charles Barry. The former was a classic architect of repute, and the author of the new War Office design; the latter was the son of the late Sir Charles Barry, who designed the Houses of Parliament. He was an honorable and kindly man, and an able architect. Mr. Henry Curry, the architect of St. Thomas's Hospital, London, also died on November 23.

During 1900 building has been brisk, despite the fact that the prices of materials are so high.

The following prices were current in December:—

Hard Stock Bricks . . . . .	36/- (about	\$8.75) per 1000
Flettons . . . . .	30/6 "	7.30 "
Red Wire Cuts . . . . .	35/6 "	8.50 "
Best Red Pressed Ruabon Facings . . . . .	105/- "	25.10 "
Best Blue Pressed Staffordshires . . . . .	87/- "	21.00 "
" Portland Cement . . . . .	38/- "	9.15 per ton
" Ground Blue Lias Lime . . . . .	24/6 "	6.00 "
" Plain Red Roofing Tiles . . . . .	41/6 "	10.00 per 1000
" Broseley Tiles . . . . .	48/6 "	11.75 "

During the past year the Society of Architects has continued to press forward its bill for the compulsory registration of architects; but this measure has encountered considerable opposition, and has not yet become law. Much attention in professional circles was also drawn to the present very inadequate provisions for architectural education in this country.

In January last a scheme was started for erecting Homes of Rest for discharged soldiers, particularly those disabled in the South African War. A freehold site at Bisley was given by Lord Pirbright, and an appeal was made for gifts in kind and money. This met with a hearty response from the building trades, and at the present time practically all the necessary materials have been presented and sufficient money subscribed to complete the Homes, which will form "The Building Trades' Gift to the Nation." Mr. Edwin O. Sachs, the honorary architect, is largely responsible for the success of the scheme.

The most notable books relating to architecture published during 1900 have been: "Gothic Art in England" (Prior); "The Art and Craft of Garden Making" (Mawson); "French Architects and Sculptors of the Eighteenth Century" (Lady Dilke); "Old Cottages and Farm Houses in Kent and Sussex" (Davie and Dawber); "Later Renaissance Architecture in England" (Belcher and Macartney); "Royal Tombs of the First Dynasty" (Flinders Petrie); "Pompeii" (Mau); "Homes for the Working Classes in Urban Districts" (Cranfield and Potter).

The space at my disposal does not allow reference to many other events affecting architecture which have taken place in this country during the past year, but from the particulars already given it will be seen that considerable activity both in architectural and building circles is being displayed throughout Great Britain. Let us hope for unprecedented progress in the arts and industries during the new century; let us hope for the time when

We shall rest, and — faith! we shall need it — lie down for an æon or two,  
Till the Master of All Good Workmen shall put us to work anew!  
And only the Master shall praise us, and only the Master shall blame;  
And no one shall work for money, and no one shall work for fame,  
But each for the joy of the working; and each, in his separate star,  
Shall draw the Thing as he sees It, for the God of Things as They are.

## Fire-proofing.

### PRACTICAL FIRE TESTS.

CONDUCTED BY THE BRITISH FIRE PREVENTION COMMITTEE.

A NUMBER of floor tests have been conducted by the British Fire Prevention Committee with most interesting results.

A test was made with a floor of wood joists (9 by 3 ins., spaced at 16½-in. centers) filled in with concrete; it should be noted that a third of the space was filled with concrete composed of coke-breeze and cement, a third with concrete composed of ballast and cement, and the remaining third with concrete composed of ballast, coke-breeze, and cement. Coats of plaster were put on the under side of the floor, but no laths were used, though lathing nails were driven into the exposed joists. The area of the floor was 100 ft. super, and ten weeks (winter) were allowed for construction and drying. The test was with a smoldering fire of thirty minutes' duration, followed by a fierce fire for one hour, followed by the application of water for four minutes. The floor was not loaded. During the test the joists caught alight, and certain portions of the soffit of the concrete filling were disintegrated, particularly when water was applied. The floor stood the test, but appeared seriously weakened; it collapsed five hours after the test was concluded. The floor boards were charred on the under side and in the joints, but they did not catch alight. The under side of the coke-breeze and cement concrete showed its straight, flat, original soffit; that of the ballast and cement concrete had crumbled away; and that of the coke-breeze, ballast, and cement concrete had also crumbled away.

On another occasion, the committee tested a floor of steel joists with concrete filling, the breeze and cement composing the concrete being in the proportion prescribed in March, 1899, by the London County Council in their addenda to Schedule 2 of the London Building Act. This particular floor, however, was given extra fire-resistance; firstly, by the corrugated iron centering which was used in the construction and was not removed, and, secondly, by a suspended lath and plaster ceiling. During the test (which lasted an hour and a quarter) the suspended ceiling fell, and the concrete was slightly disintegrated on the under side. The floor deflected 2¾ ins. at the center, but subsequently returned to within 1 in. of level. The fire did not pass through the floor, which had been loaded with 168 lbs. per sq. ft.

During another test a floor of steel joists and coke-breeze concrete, which the Metropolitan Building Act may be taken to describe as "fire-resisting," collapsed after a fire of less than an hour and a half, the temperature not exceeding 1,700 degs. Fahr. The composition of the concrete used was exactly as defined by the London County Council, and the most favorable form of joist —

the steel joist — was employed. This test was followed by one with a floor of deal joists and coke-breeze concrete which, while being constructed so as to comply with Section 74 of the London Building Act, did not present those features which are usually associated with "fire-proof" floors. The joists were of fir 7 by 2 ins. and were spaced at 12½-in. centers; wooden fillets were nailed to their sides. Concrete was filled in on the top of the centering and between the joists to a depth of 5 ins., and to the soffit ⅝-in. tongued and grooved matchboarding was fixed, and a floor of ⅞-in. straight joint boards laid on top of the joists. The floor was loaded with 100 lbs. per sq. ft. distributed. The following is a summary of the effect: In fifteen minutes all the boarding to the soffit was consumed. In fifty-four minutes the flame came through the floor between the last joist and the wall. In sixty minutes the floor had deflected, and the concrete had cracked transversely. In seventy-four minutes the concrete between two of the joists fell, and in eighty-two minutes the whole floor and load collapsed. The joists were charred up 2 ins. on the under side, but the floor boards were practically uninjured.

The following is the result of a test with a floor made by the "Gypsine" Brick Company, Ltd., of London and Paris: In twenty-seven minutes small flakes dropped off the soffit in places, and the upper surface was quite cool to the touch. In thirty-four minutes further small flakes dropped, and a longitudinal crack about 5 ft. long appeared. In fifty-nine minutes, when the gas was shut off, the soffit was red-hot and vapor issued through cracks in the upper surface and from the stack of bricks forming the load. After the test, cracks surrounding the floor were observed; they were about ⅛ in. wide in places and went down obliquely through the floor, appearing as hair cracks on the soffit. The floor at one end had sunk about 1¼ ins. in the center. The material used crumbled away when broken for examination. Its composition was stated by the manufacturer as "a mixture, by means of water, of plaster, hydraulic lime, some sort of neutral material, such as coke, sand, etc., and a fire-proof material, such as asbestos, with an addition of sulphuric acid." The floor was 10 ft. by 3 ft. 6 in., and consisted of a single slab, without joists.

The floor erected by the Mural and Decorations Syndicate, Ltd., of London, tested by the committee, was 10 ft. sq. in the clear, and was loaded with 56 lbs. per sq. ft. distributed. Eight weeks (winter) were allowed for construction and drying. Secured to the top of the joists and covering the whole area of the floor was some patent terra-cotta wired lathing of ¾-in. mesh. The thickness of the concrete varied from 2 ins. over the top of the joists to 7 ins. between the joists. Patent lathing was used for the ceiling. The fire lasted an hour and a quarter, and the result was as follows: A considerable portion of the plaster ceiling fell during the test, some of the lathing being bare before the test closed. The floor cracked at each side to the extent of ½ in., and dropped ¼ in. When water was applied, smoke, steam, and sparks came through cracks in the top of the floor. One of the joists carrying the ceiling was entirely destroyed, two partially so, and one, though discolored, was practically sound.



## Selected Miscellany.

## NOTES FROM NEW YORK.

The last monthly meeting and dinner of the Architectural League was particularly interesting; in fact, just such a meeting as the members have been waiting for, and consequently there was a large attendance and much enthusiasm. The majority of the dinners are attended principally by those who occupy their time in conjuring up constitutional amendments, or who want to say a few words upon the ethics or psychology of architecture, or to plead the cause of women as the great architects of the future. The subject for discussion at the recent dinner was the Pan-American Exposition at Buffalo, and



MEDALLIONS, BY BARNEY & CHAPMAN, ARCHITECTS.  
Atlantic Terra-Cotta Company, makers.

Turner, and Bitter, respectively. The latter two gentlemen were unable to be present, so that their part of the



RESIDENCE AT NEWARK, N. J. HOWARD & CAULDWELL, ARCHITECTS.

the subject was to be treated from the standpoint of the architect, painter, and sculptor by Messrs. Carrere,



PANEL, BY G. L. MORSE, ARCHITECT.  
Excelsior Terra-Cotta Company, makers.

program was effectively outlined by Mr. Carrere as well as his own. Mr. Carrere was very enthusiastic about the approaching exposition, and gave those who were fortunate enough to have heard him a splendid idea of its scope and undoubted beauty, as well as a comprehensive understanding of the great undertaking, leaving us all with a fixed determination to "get there or bust." Among other things, Mr. Carrere said that this is the first great exposition where the entire grounds will be treated as a unit, making possible a perfect ensemble, logical and complete. The color scheme will be particularly attractive, and is under the personal direction of Mr. Turner.

The general motif of the buildings will be Southern Renaissance, but not necessarily Spanish, as many



GATE LODGE, "ARDSLEY TOWERS," ARDSLEY ON THE HUDSON, NEW YORK.

L. C. Holden, Architect.

Roofed with American S. Tile, furnished by Pfotenbauer & Nesbit, agents for New York.

suppose. There will be special attention paid to the sculpture in regard to harmonious scale and appropriateness. The groups will represent the story of man in a logical growth, from his origin to his present high state of development, starting in order from the entrance to the great Electrical Tower, the *point rouge* of the whole exposition.

Plans are being prepared for a tunnel and sub-surface terminal under the Grand Central Station. The possibilities of this innovation are a special suburban train tunnel connecting with a loop at the 42d Street Terminal; electricity as a motive power for suburban trains, and underground connection for passengers between the New York Central tunnel and the Rapid Transit subway station later; a track connection enabling trains to run through to City Hall.

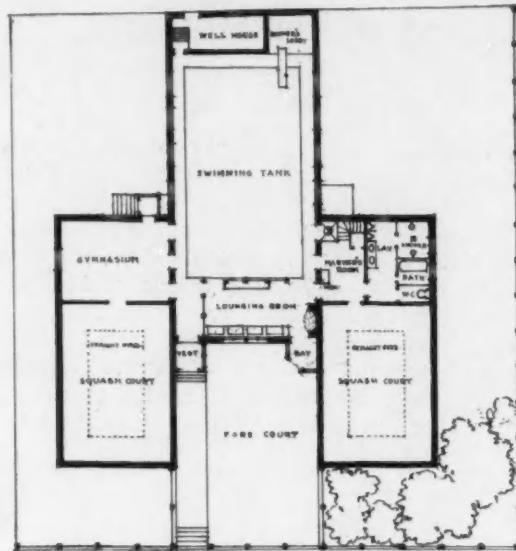
It is reported that a syndicate of which two Boston capitalists are largely interested is to build a new Hotel Brunswick in New York, and that plans are to be prepared by architect Henry Ives Cobb of Chicago. The hotel will be erected on the site of the old Brunswick on Fifth Avenue, from East 26th Street to East 27th Street,



RESIDENCE AT SHORT HILLS, N. J.

Parish & Schroeder, Architects.

Roofed with American S. Tile, furnished by Pfotenbauer & Nesbit, agents for New York.



BIG TREE SWIMMING POOL, CAMBRIDGE, MASS.

R. Clipston Sturgis, Architect.

overlooking Madison Square. The building will be eighteen stories in height.

The New York Athletic Club's summer home on Travers' Island, Long Island Sound, was destroyed by fire last week, and steps will be taken immediately to rebuild on a more elaborate scale.

Mr. Richard H. Hunt, architect, announces that he has formed a partnership with his brother, Mr. Jarvis Hunt.

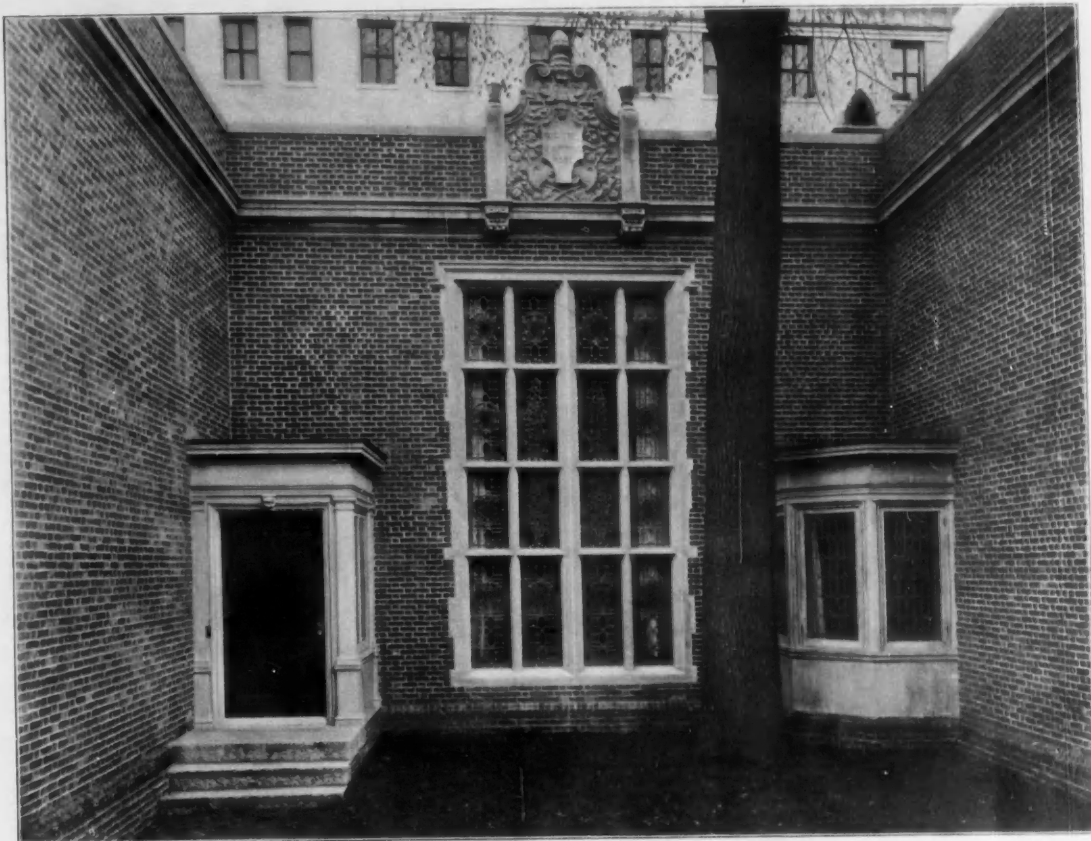
The Chamber of Commerce has purchased the old Real Estate Exchange on Liberty Street, and will erect their magnificent new building on that site. This is a fact to be sincerely regretted, as Liberty Street is very narrow, and the building will be as wretchedly placed as



DETAIL, BY COPE & STEWARDSON, ARCHITECTS.

Perth Amboy Terra-Cotta Company, makers.





↓ BIG TREE SWIMMING POOL, CAMBRIDGE, MASS.  
R. Clipston Sturgis, Architect.

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BATTERY PARK BUILDING, NEW YORK CITY.  
Fire-proofed by the National Fire-proofing Company.

the beautiful Clearing House on Pine Street, which is lost between two sky-scrapers on a narrow little alley.

We regret to announce the death of Mr. Frederick Clarke Withers, one of the oldest and most respected of New York's architects. Mr. Withers was best known for his work during the Gothic revival in this country, and perhaps the best monument to his memory is the Jefferson Market Court at 6th Avenue and Eighth Street.

#### IN GENERAL.

The international competition for the University of California, which marked an architectural epoch in America, has taken a definite step. In order to carry out the execution of such an



CAPITAL, EXECUTED IN TERRA-COTTA BY THE  
NEW JERSEY TERRA-COTTA COMPANY.



PANEL, BY PAUL E. DUBOY, ARCHITECT.  
New York Architectural Terra-Cotta Company, makers.

extensive and important work, covering so long a period of time, a perpetual board of advisers has been appointed, composed of the following well-known architects: D. Despradelle, of Boston, and Charles F. McKim, John M. Carrere, and John Galen Howard, of New York.

Frank Lloyd Wright and Webster Tomlinson, architects, Chicago, have formed a copartnership, with offices at Oak Park, Ill., and 17 Van Buren Street, Chicago.

Vivian & Gibb, architects, Ithaca, N. Y., have dissolved partnership. Arthur W. Gibb will retain the firm's offices in the Trust Company Building, while Clinton L. Vivian opens an office in the Hawkins Building, Ithaca.

On the evening of January 12, Mr. Sid H. Nealy read a paper before the Washington Architectural Club on the "Architectural Lessons of the Galveston Disaster."

At the regular monthly meeting of the Cincinnati Chapter, A. I. A., the drawings of the first competition of the year were exhibited. The problem was a school-house in a thrifty suburban town. Although there were



THE ODEON AND MASONIC TEMPLE, ST. LOUIS, MO.  
W. Albert Swasey, Architect.

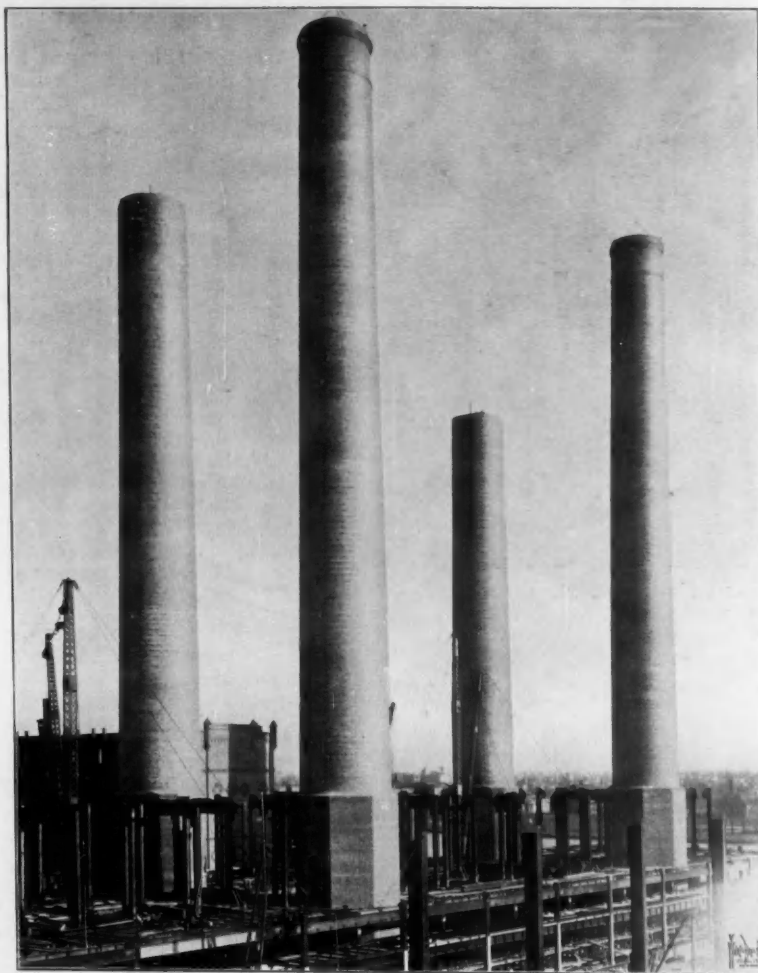
Built of gray and white impervious brick. Made by the Hydraulic-Press Brick Company.



but four entries, the work was of the most satisfactory character, and the comments of the jury led to an interesting discussion. On the same evening Mr. Ludwig Eid gave a talk on building materials employed in the construction of buildings on the continent.

#### COST OF USING ENAMELED BRICK.

THERE is a very prevalent idea that enameled bricks are too expensive to be commonly used where such material would be desirable. Aside from the broad question that nothing is too good to meet the necessities of a particular case in the best manner, the fact is that a facing of enameled brick can now be applied to a masonry wall at so comparatively slight an expense as to



GROUP OF CHIMNEYS FOR THE NEW POWER HOUSE OF THE MANHATTAN ELEVATED RAILROAD, NEW YORK CITY.  
Brick furnished by Sayre & Fisher Company.

make it undesirable to economize in first cost by using anything else. The Tiffany Enameled Brick Company manufacture bricks of varying thickness, running from  $1\frac{1}{2}$  to  $4\frac{1}{2}$  ins., all presenting, when laid up in the wall, the appearance of bricks of the ordinary size. These bricks range in price from twenty-seven cents per square foot for the thinner varieties to forty-three cents for the thickest. The thinner bricks are made with a slot, so that they can be firmly anchored to the wall, and except in preserving the brick form on the exterior, are practically enameled tiles, but are made on the same body and with the same care in applying the enamel which characterizes the more commonly used sizes. There is no



TERRA-COTTA FIRE-PROOF CONSTRUCTION, CITY POST OFFICE, WASHINGTON, D. C.  
Work done by the Central Fire-proofing Company.



DETAIL, BY BRIGHAM & ADDEN, ARCHITECTS.  
Conkling-Armstrong Terra-Cotta Company, makers.



LINDALL AVENUE CHURCH, ST. LOUIS, MO.

Link & Rosenheim, Architects.  
Roofed with Ludowici roofing tile.



DETAIL, EXECUTED IN TERRA-COTTA  
BY THE NORTHWESTERN TERRA-  
COTTA COMPANY.

out in enameled brick. For elevator wells in the interior of a building, for lavatories, sub-basements, and interior courts, the use is already very prevalent. There are also an increasing number of buildings which have been faced throughout with enameled brick. A good enameled brick is the best known resistant of fire and water, and will stand for inside or outside work in any climate; while with the new dead finish enameled brick, handsome effects can readily be obtained, and the unpleasant effect of the glaze avoided, while all the advantages of the impervious and easily washed surface is retained.

reason why these thin facings should not be applied in a perfectly satisfactory manner, and there certainly is no question about the excellent appearance of a wall which is faced through-

## MISCELLANEOUS ITEMS.

The entrance to "Riverbank Court," illustrated in the half-tone plate form of this number, has a dome ceiling of Guastavino construction.

George S. Mills, architect, Toledo, Ohio, has opened a branch office at Lima, Ohio, in the Masonic Building, which has just been completed from his plans. Charles W. Dawson, formerly of Colorado Springs, has been placed in charge. Manufacturers' catalogues and samples desired.

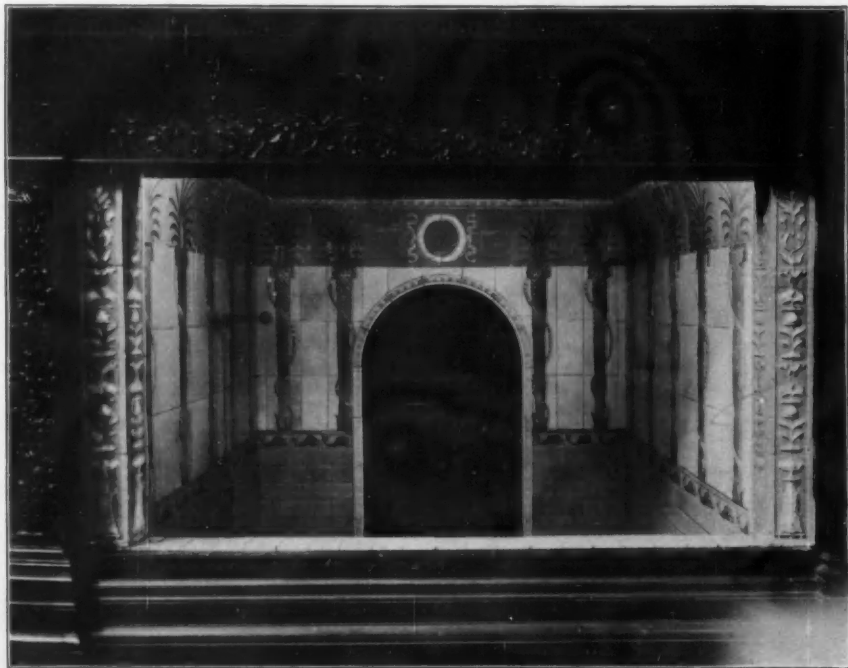
Sylvain Schnaittacher, architect, after seven months spent in Europe, has resumed business at his former address, 404 Adams Building, San Francisco. Manufacturers' catalogues and samples desired.

Architect James P. Hubbell, formerly of Keokuk, Iowa, has moved to Dallas, Texas, and will be associated with Herbert M. Greene of that city under the firm name of Hubbell & Greene. The firm would be pleased to receive late catalogues and samples.

R. Guastavino Company are now operating a factory of their own, exclusively for the making of the glazed and finished material with which, as contractors, their name has been so long identified.

The National Fire-proofing Company, Pittsburgh, is sending out a very attractive "Cake Walk" calendar, in which "burnt clay" is shown in a novel and pleasing way.

The Penn Buff Brick and Tile Company, manufacturers of "Blue Ridge" enameled brick, have recently added to their plant considerable new machinery of the most modern type, which will increase their capacity about threefold. This company sold every brick it could make during the year 1900.



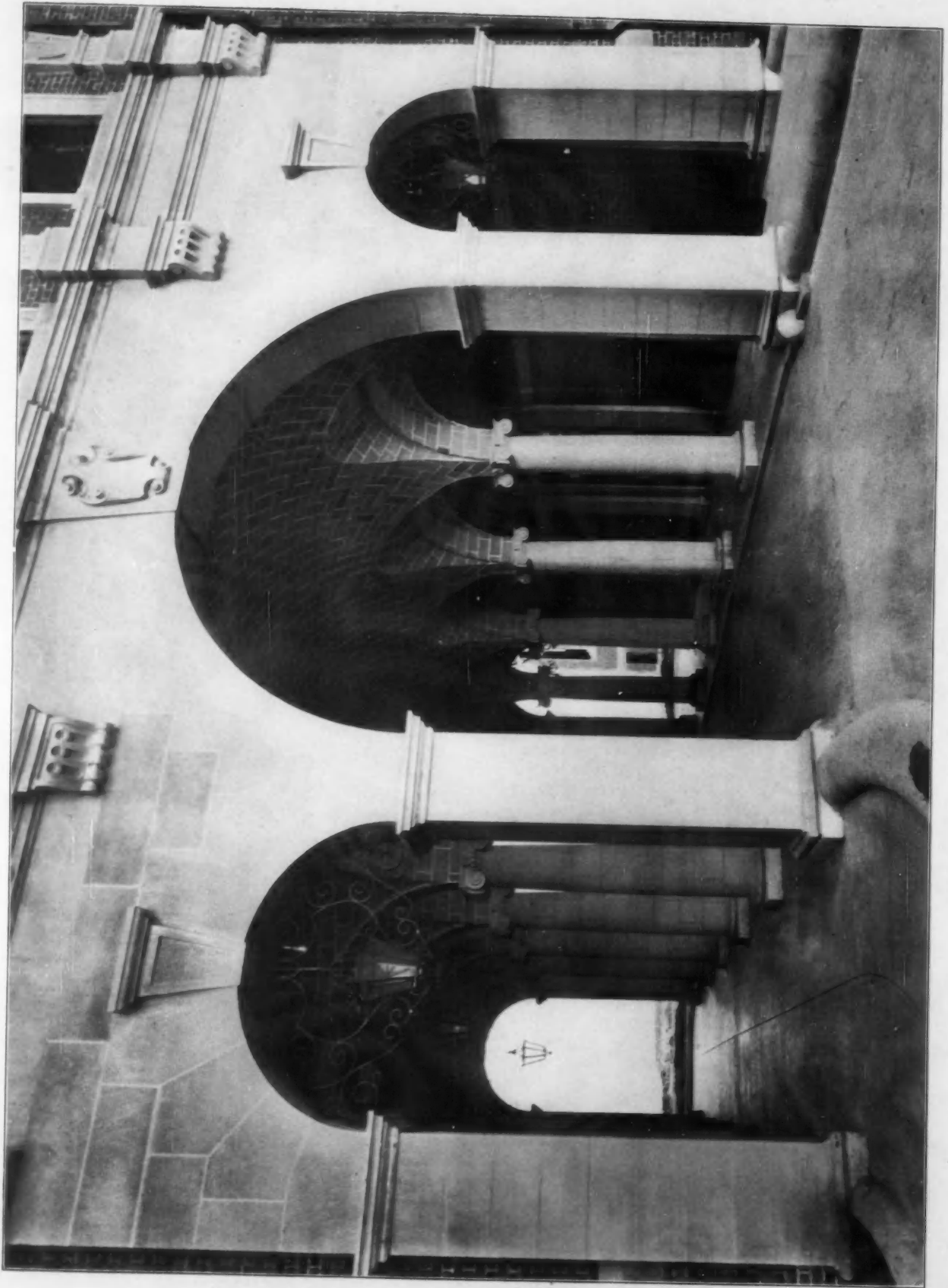
BAPTISTRY, TREMONT TEMPLE, BOSTON, MASS.

Blackall & Newton, Architects.

The Faience has a glazed surface with subdued colors, pale yellow and green predominating. The pilasters at side are a pale gray blue. Grueby Faience Company, makers.

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ENTRANCE, RIVERBANK COURT, CAMBRIDGE, MASS.  
HENRY B. BALL, H. E. DAVIDSON, ASSOCIATE ARCHITECTS.

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BOSTON MEDICAL LIBRARY, FENWAY, BOSTON, MASS.  
SHAW & HUNNEWELL, ARCHITECTS.

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RANDALL DINING HALL, HARVARD UNIVERSITY, CAMBRIDGE, MASS.  
WHEELWRIGHT & HAVEN, ARCHITECTS.

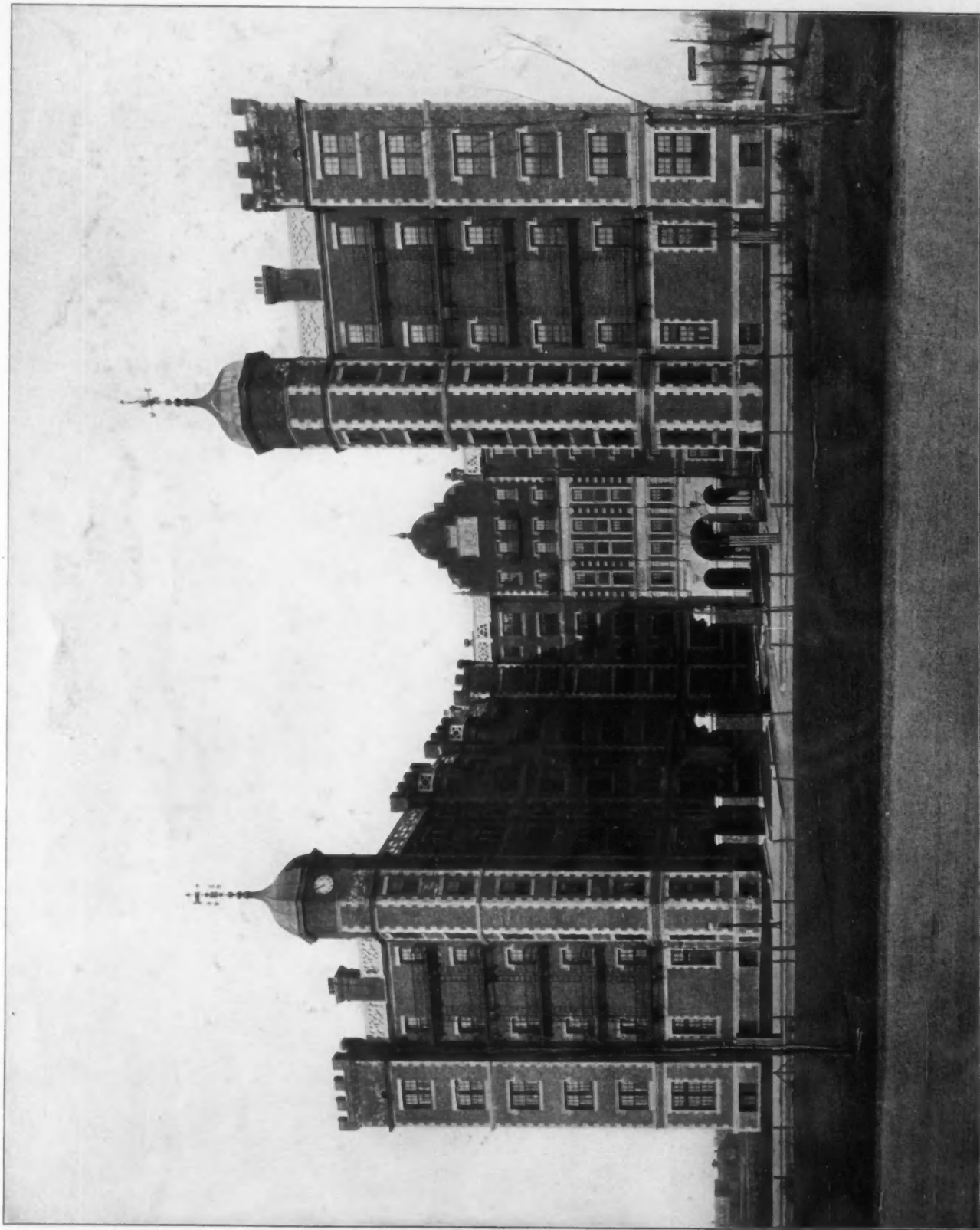
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HOUSE AT BROOKLINE, MASS.  
WINSLOW & BIGELOW, ARCHITECTS.

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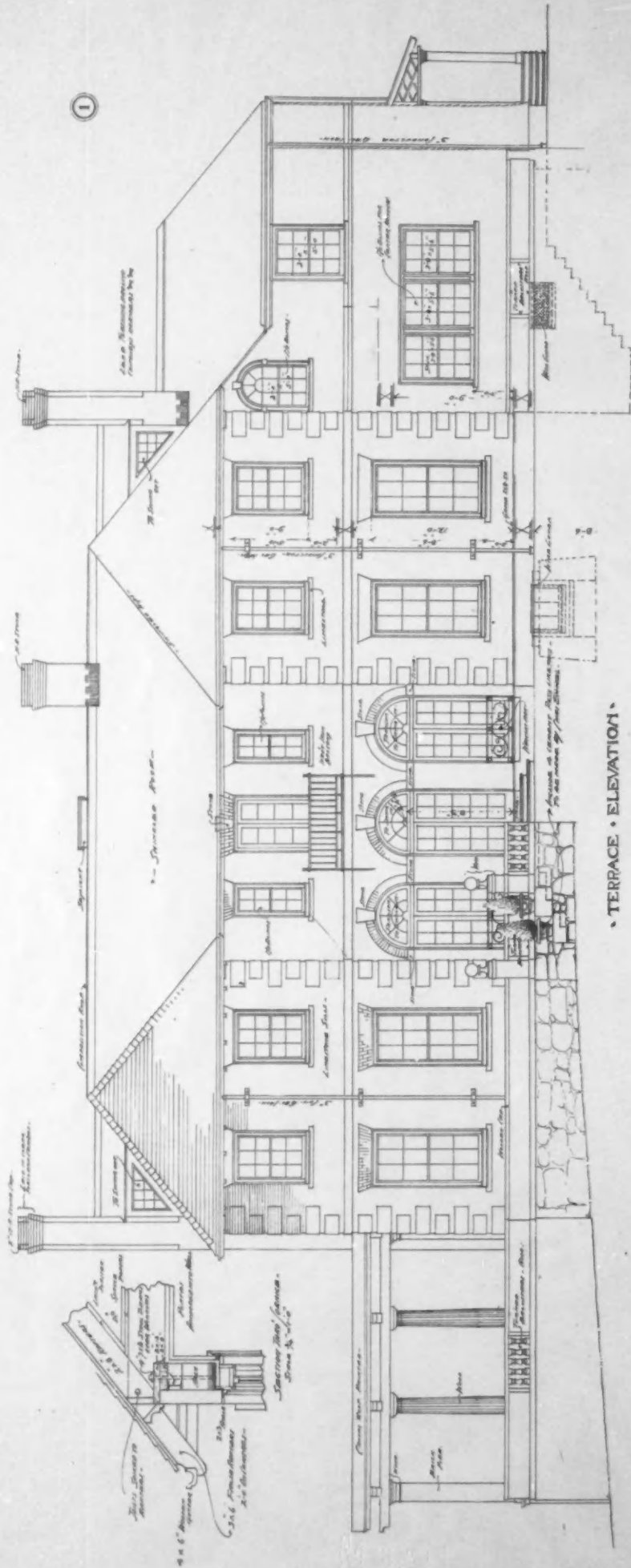
RIVERBANK COURT, CAMBRIDGE, MASS.  
HENRY B. BALL, H. E. DAVIDSON, ASSOCIATE ARCHITECTS.

THE BRICKBUILDER,  
JANUARY,  
1901.

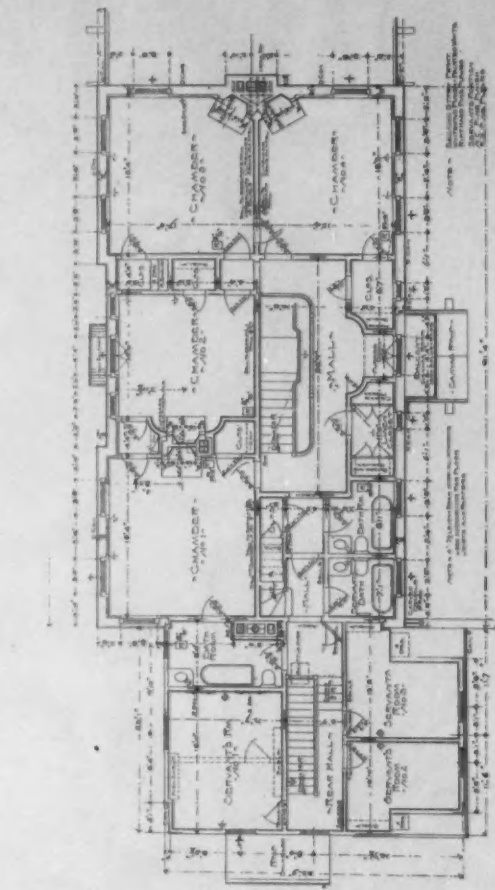
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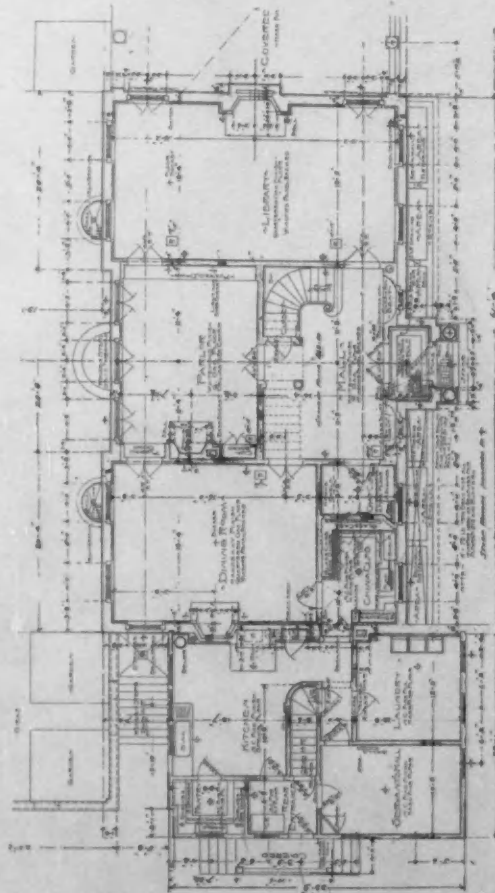
HOUSE FOR ROBERT S. PEABODY, ESQ., FENWAY, BOSTON, MASS.  
PEABODY & STEARNS, ARCHITECTS.



TERRACE ELEVATION.



FIRST FLOOR.



SECOND FLOOR.

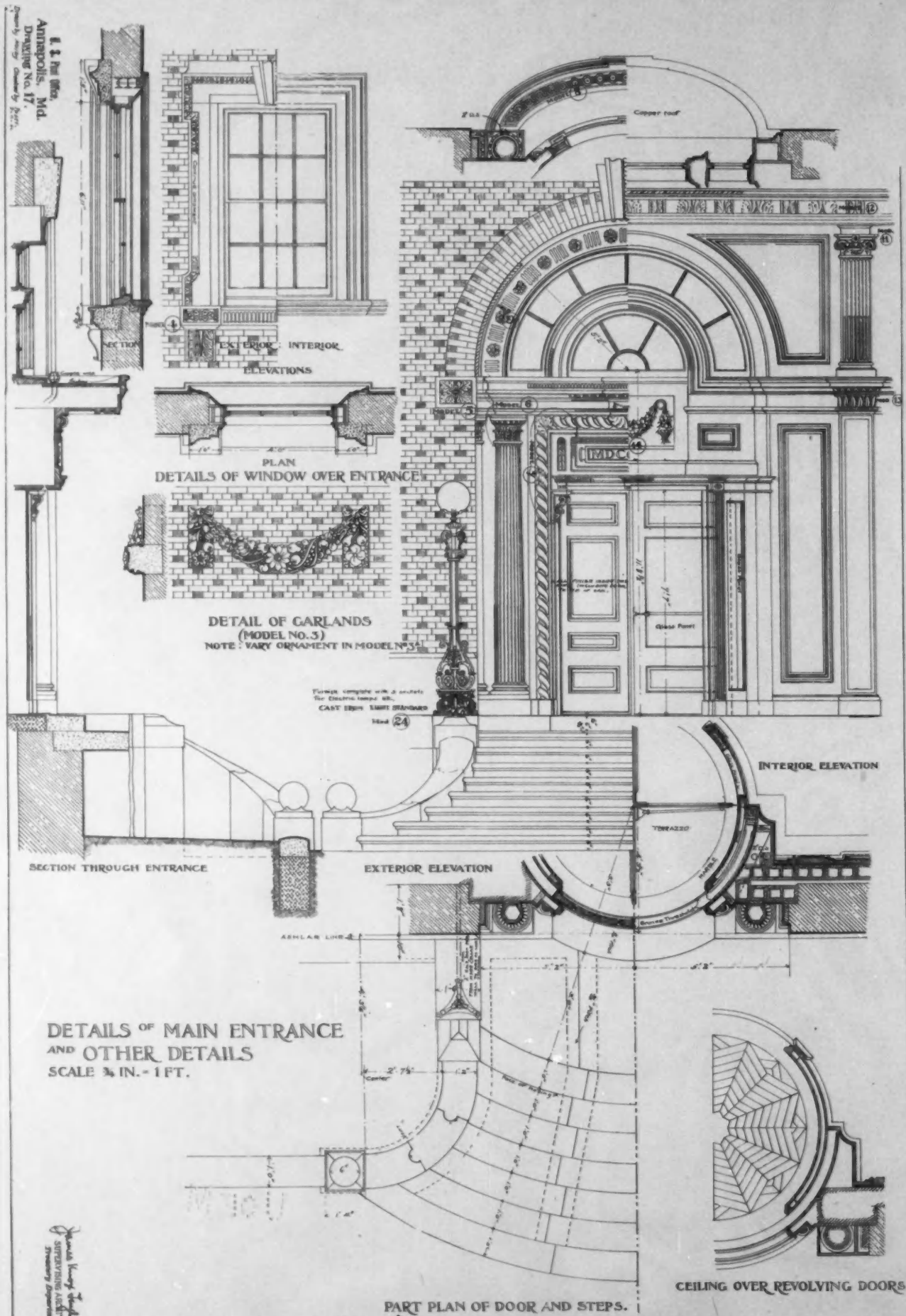
HOUSE AT BROOKLINE, MASS.  
WINSLOW & BIGELOW, ARCHITECTS.



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PLATE 2.

**L. J. RICE, INC.,**  
Annapolis, Md.  
Draying No. 17.  
Drawn by *Henry* Drawn by *Harry*

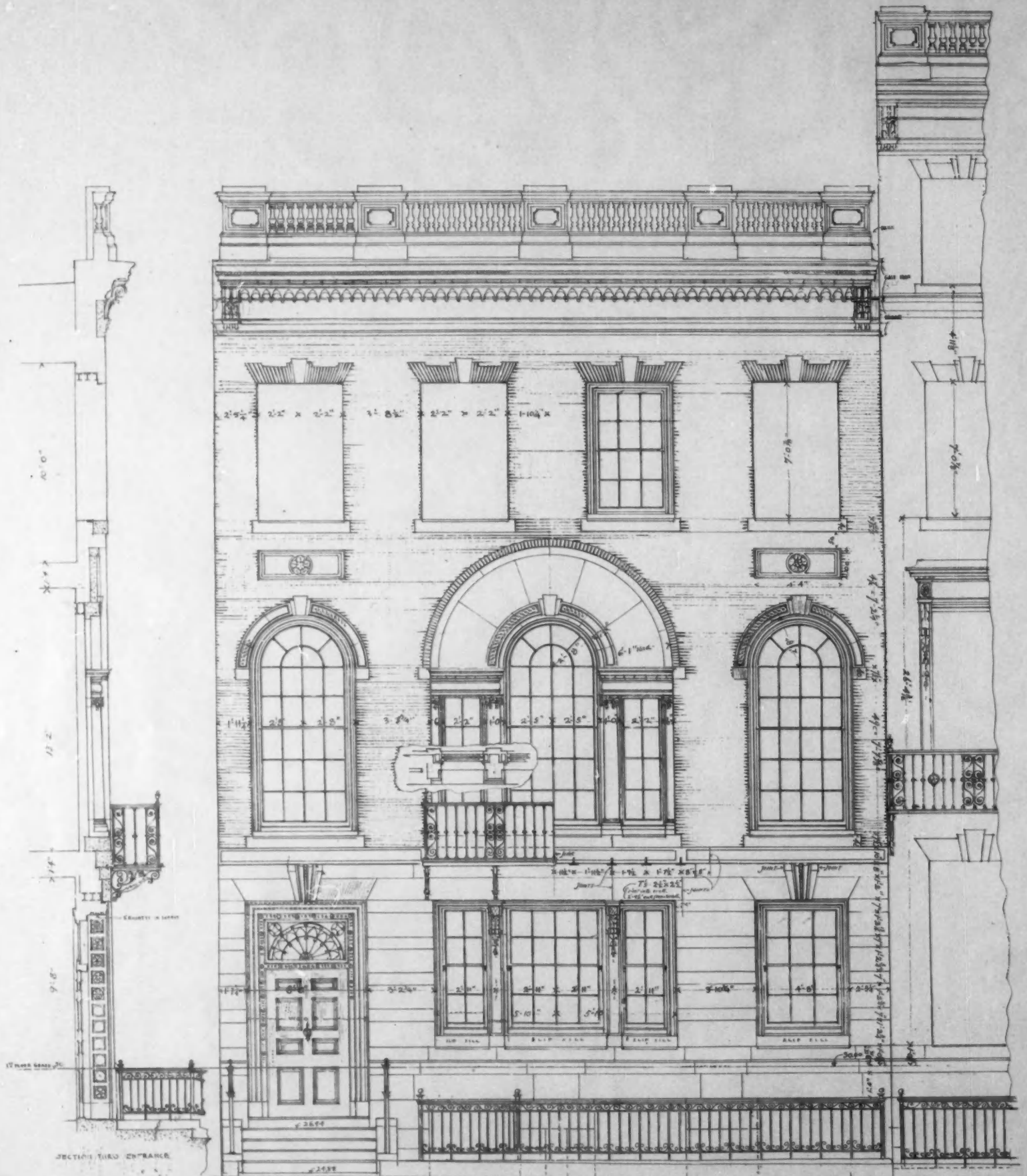


POST-OFFICE BUILDING, ANNAPOLIS, MD.  
JAMES KNOX TAYLOR, SUPERVISING ARCHITECT.

James W. Taylor,  
SUPERVISING ARCHITECT  
Treasury Department

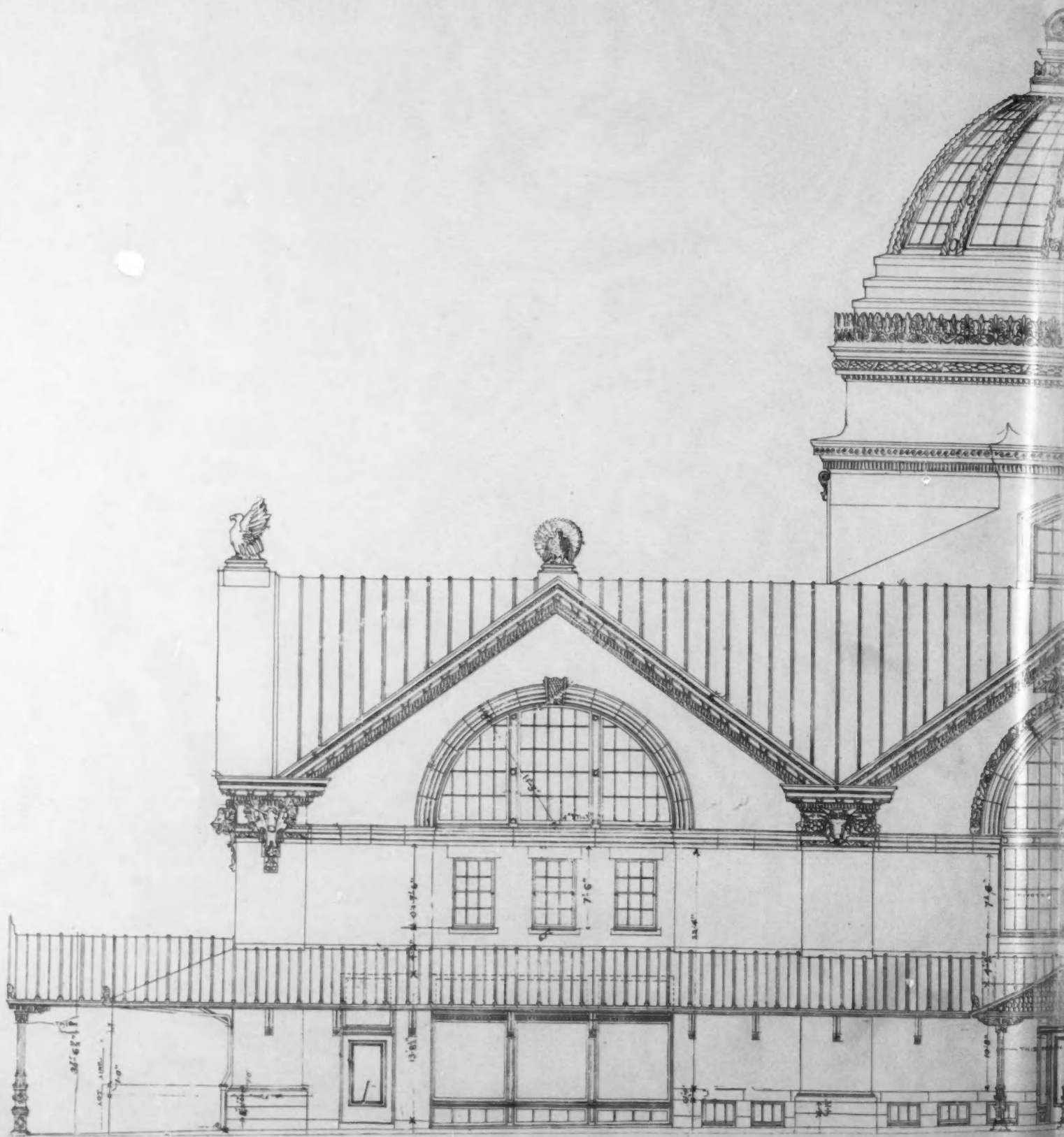






HOUSE FOR ROBERT S. PEABODY, ESQ., FENWAY, BOSTON, MASS.  
PEABODY & STEARNS, ARCHITECTS.

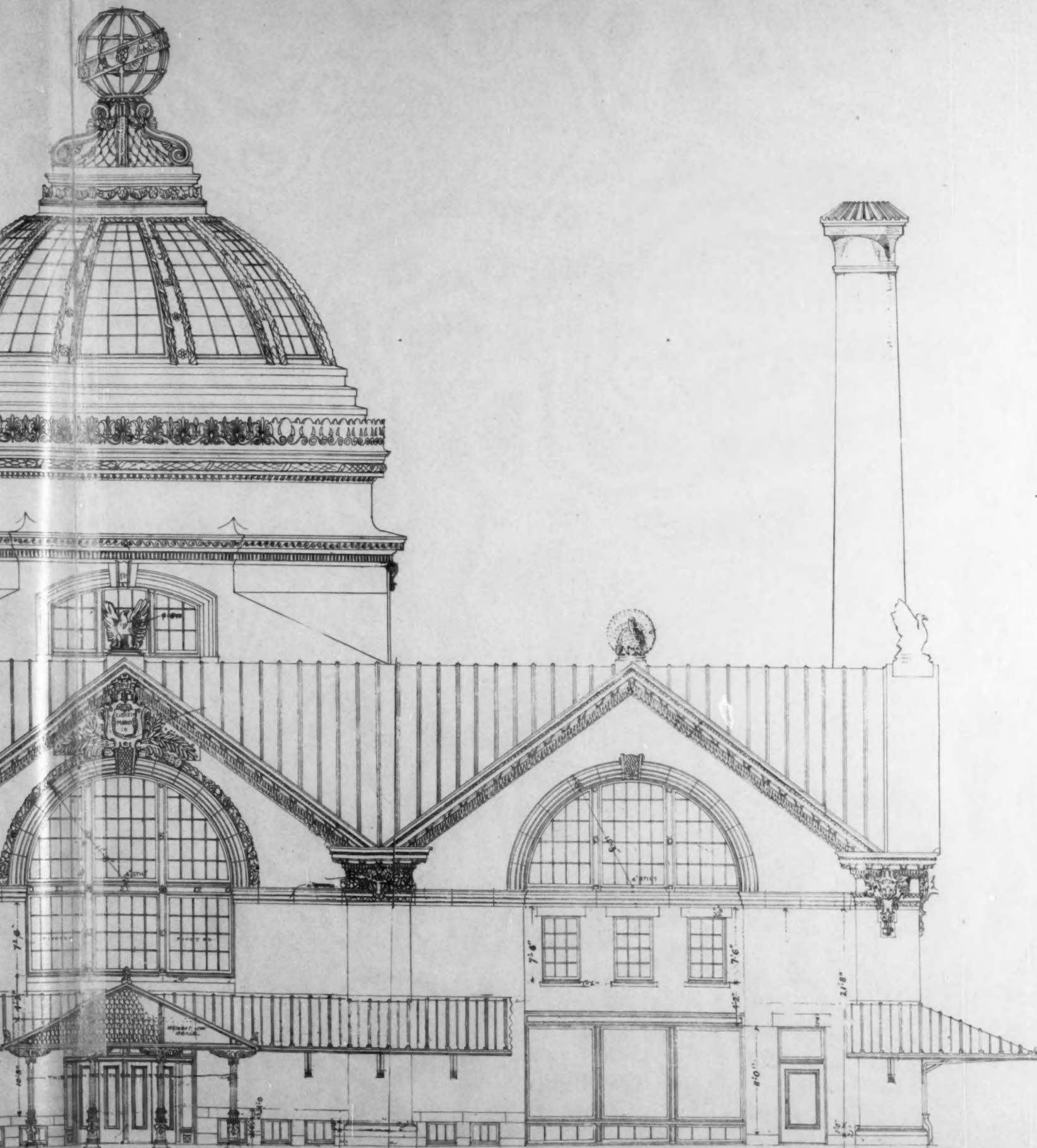




MARKET BUILDING.

MARKET BUILDING.  
PEABODY & STEARNS





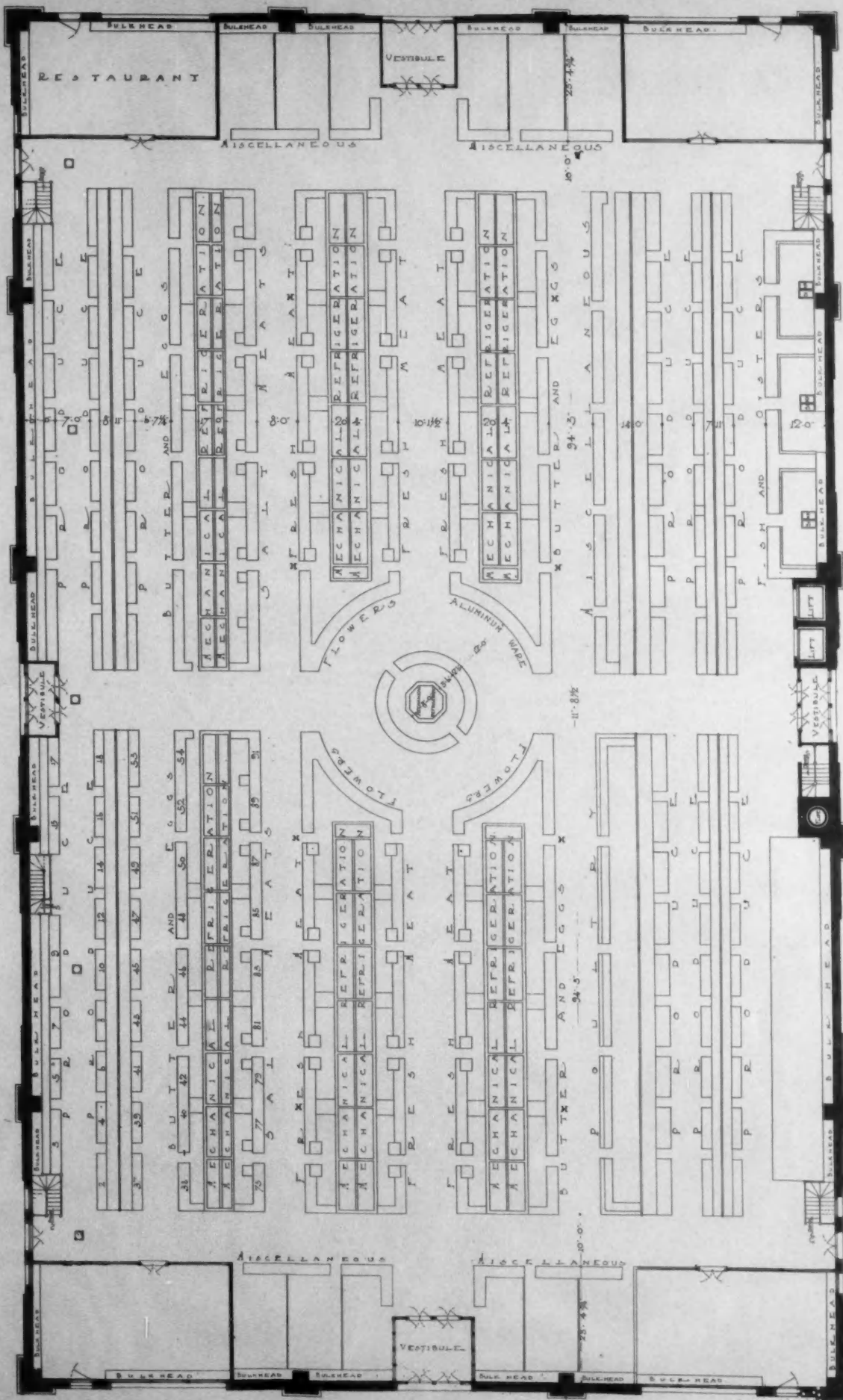
T BUILDING, PITTSBURGH, PA.  
PEABODY & STEARNS, ARCHITECTS.



# THE BRICKBUILDER.

VOL. 10. NO. 1.

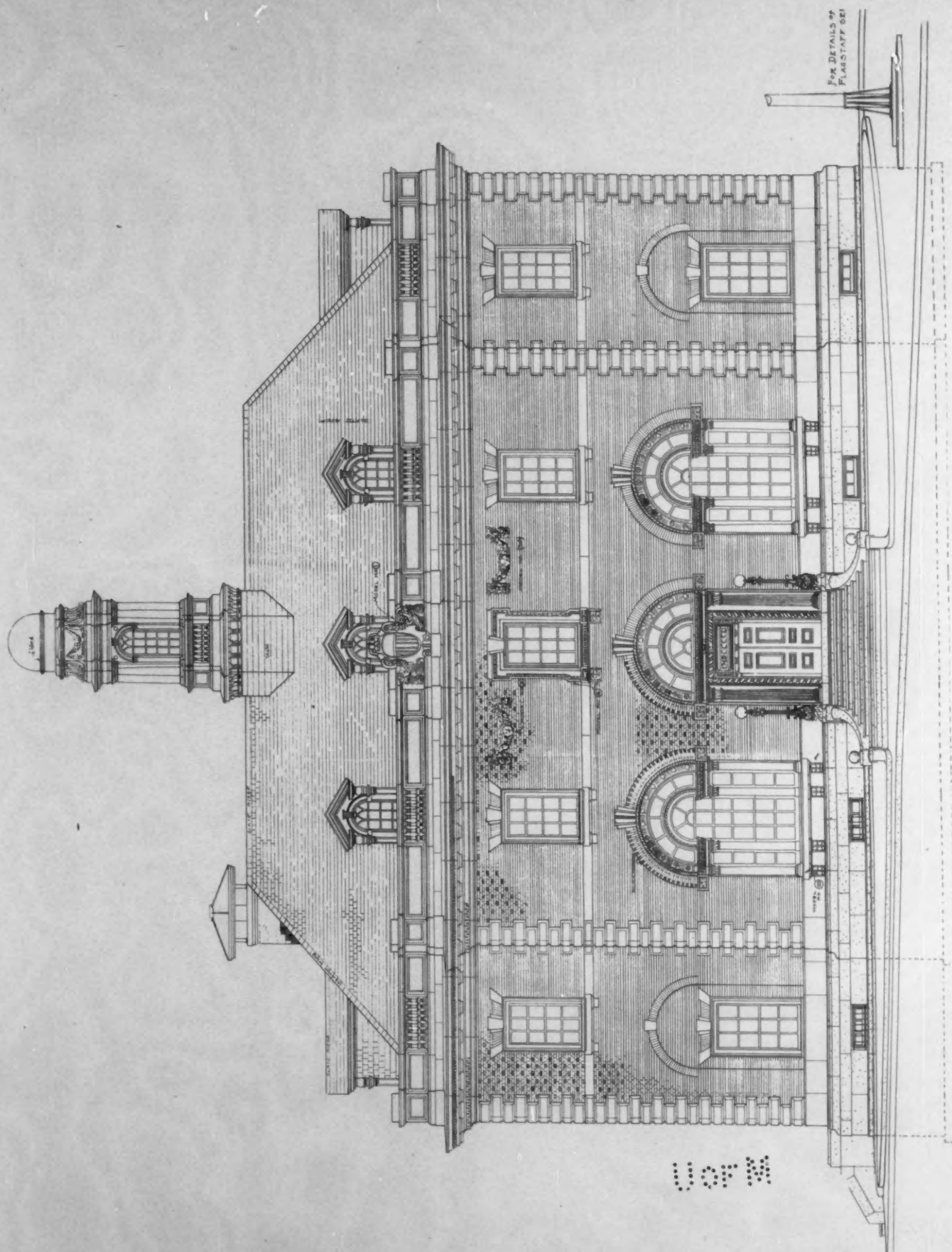
PLATE 6.



PLAN, MARKET BUILDING, PITTSBURGH, PA.  
PEABODY & STEARNS, ARCHITECTS.



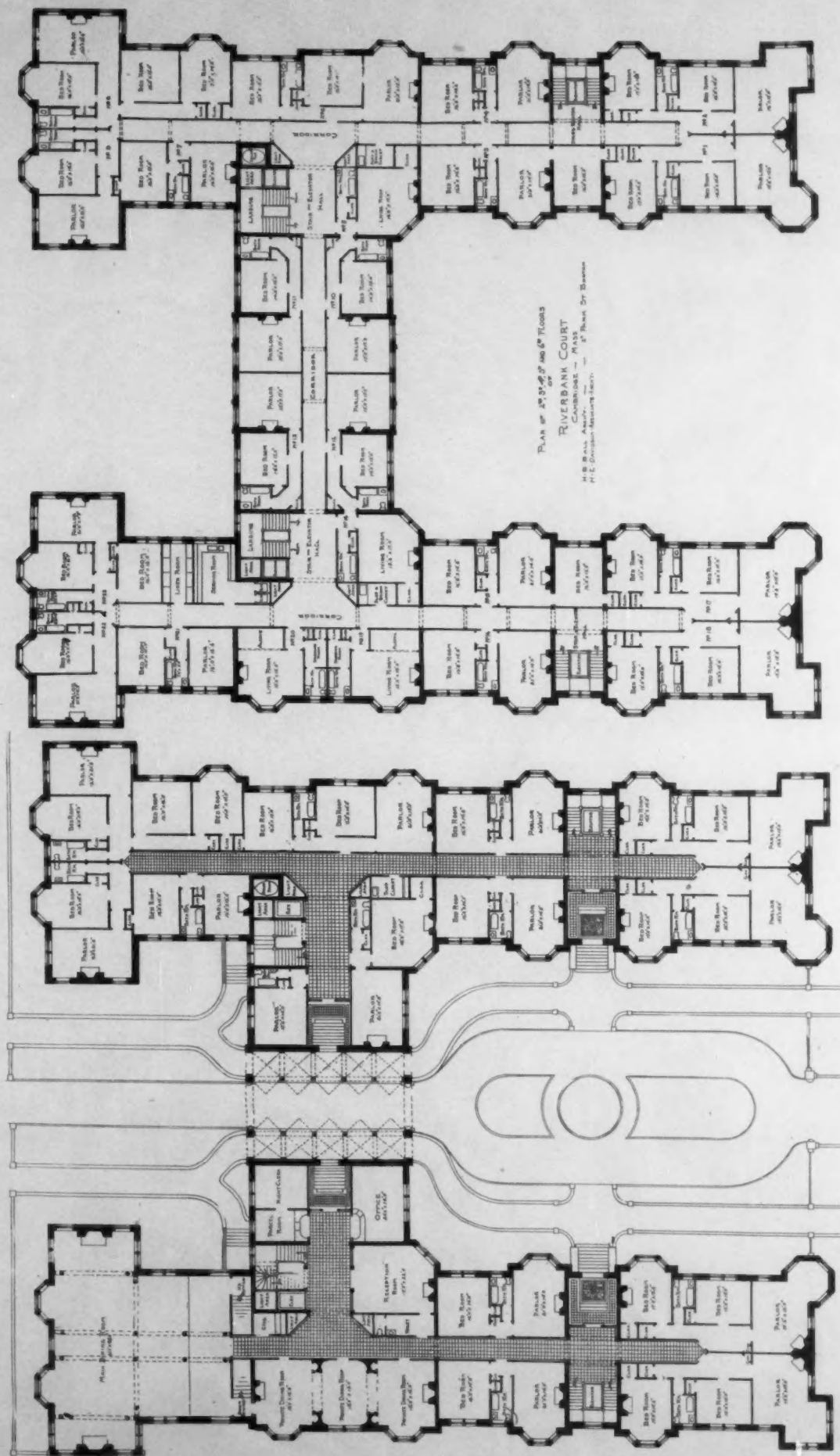
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POST-OFFICE BUILDING, ANNAPOLIS, MD.  
JAMES KNOX TAYLOR, SUPERVISING ARCHITECT.

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PLANS, RIVERBANK COURT, CAMBRIDGE, MASS.  
BALL & DAVIDSON, ARCHITECTS.